

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 May 2001 (17.05.2001)

PCT

(10) International Publication Number
WO 01/34802 A2

(51) International Patent Classification⁷: C12N 15/12,
15/62, 15/11, 1/21, 5/10, C07K 14/47, 16/18, 19/00, A61K
38/17, 31/70, 39/395, 48/00, G01N 33/68, C12Q 1/68

(21) International Application Number: PCT/US00/30904

(22) International Filing Date:
9 November 2000 (09.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/439,313 12 November 1999 (12.11.1999) US
09/443,686 18 November 1999 (18.11.1999) US

(71) Applicant (for all designated States except US): CORIXA
CORPORATION [US/US]; Suite 200, 1124 Columbia
Street, Seattle, WA 98104 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): XU, Jiangchun
[US/US]; 15805 SE 43rd Place, Bellevue, WA 98006

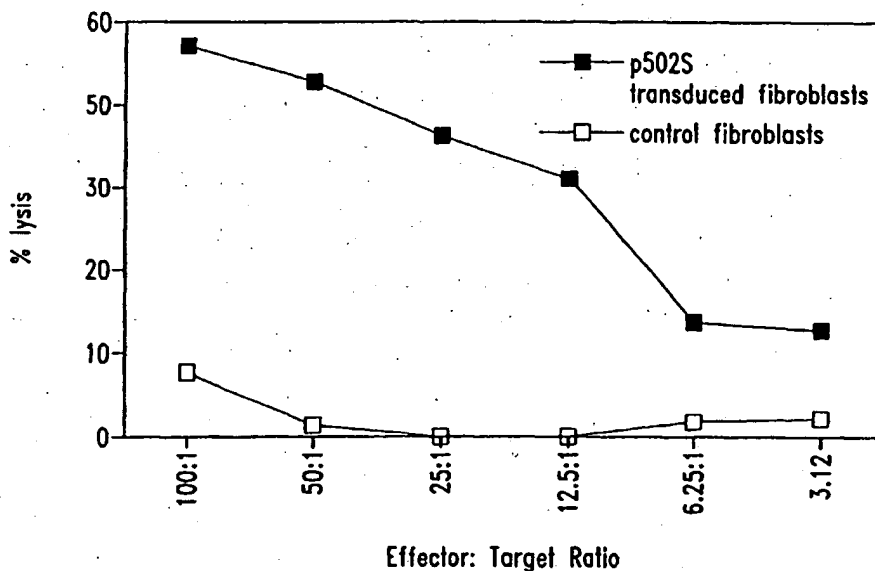
(US). DILLON, Davin, C. [US/US]; 18112 NW Mon-
treux Drive, Issaquah, WA 98027 (US). MITCHAM,
Jennifer, L. [US/US]; 16677 NE 88th Street, Redmond,
WA 98052 (US). HARLOCKER, Susan, L. [US/US];
7522 - 13th Avenue W., Seattle, WA 98117 (US). JIANG,
Yuqiu [CN/US]; 5001 South 232nd Street, Kent, WA
98032 (US). REED, Steven, G. [US/US]; 2843 - 122nd
Place NE, Bellevue, WA 98005 (US). KALOS, Michael,
D. [US/US]; 8116 Dayton Ave. N., Seattle, WA 98103
(US). RETTER, Marc, W. [US/US]; 33402 NE 43rd
Place, Carnation, WA 98014 (US). STOLK, John, A.
[US/US]; 7436 Northeast 144th Place, Bothell, WA 98011
(US). DAY, Craig, H. [US/US]; 11501 Stone Ave. N.,
C122, Seattle, WA 98133-8317 (US). SKEIKY, Yasir,
A.W. [CA/US]; 15106 SE 47th Place, Bellevue, WA 98006
(US). WANG, Aijun [CN/US]; 3106 213th Place SE,
Issaquah, WA 98029 (US).

(74) Agents: POTTER, Jane, E., R.; Seed Intellectual Prop-
erty Law Group PLLC, Suite 6300, 701 Fifth Avenue, Seat-
tle, WA 98104-7092 et al. (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,

[Continued on next page]

(54) Title: COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF PROSTATE CANCER



(57) Abstract: Compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer, are disclosed. Compositions may comprise one or more prostate-specific proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a prostate-specific protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate-specific protein, or mRNA encoding such a protein, in a sample are also provided.

WO 01/34802 A2



DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— Without international search report and to be republished upon receipt of that report.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF PROSTATE CANCER

5 TECHNICAL FIELD

The present invention relates generally to therapy and diagnosis of cancer, such as prostate cancer. The invention is more specifically related to polypeptides comprising at least a portion of a prostate-specific protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for
10 prevention and treatment of prostate cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

Prostate cancer is the most common form of cancer among males, with an estimated incidence of 30% in men over the age of 50. Overwhelming clinical evidence shows that human prostate cancer has the propensity to metastasize to bone, and the disease appears to progress
15 inevitably from androgen dependent to androgen refractory status, leading to increased patient mortality. This prevalent disease is currently the second leading cause of cancer death among men in the U.S.

In spite of considerable research into therapies for the disease, prostate cancer remains difficult to treat. Commonly, treatment is based on surgery and/or radiation therapy, but
20 these methods are ineffective in a significant percentage of cases. Two previously identified prostate specific proteins - prostate specific antigen (PSA) and prostatic acid phosphatase (PAP) - have limited therapeutic and diagnostic potential. For example, PSA levels do not always correlate well with the presence of prostate cancer, being positive in a percentage of non-prostate cancer cases, including benign prostatic hyperplasia (BPH). Furthermore, PSA measurements correlate
25 with prostate volume, and do not indicate the level of metastasis.

In spite of considerable research into therapies for these and other cancers, prostate cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating such cancers. The present invention fulfills these needs and further provides other related advantages.

30 SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the

diagnosis and therapy of cancer, such as prostate cancer. In one aspect, the present invention provides polypeptides comprising at least a portion of a prostate-specific protein, or a variant thereof. Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises at least an immunogenic portion of a prostate-specific protein, or a variant thereof, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536; (b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and (c) complements of any of the sequence of (a) or (b). In certain specific embodiments, such a polypeptide comprises at least a portion, or variant thereof, of a protein that includes an amino acid sequence selected from the group consisting of sequences recited in any one of SEQ ID NO: 112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380, 383, 477-483, 496, 504, 505, 519, 520, 522, 525, 527, 532, 534, 537-550.

15 The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a prostate-specific protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

20 Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines for prophylactic or therapeutic use are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and an immunostimulant.

25 The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a prostate-specific protein; and (b) a physiologically acceptable carrier. In certain embodiments, the present invention provides monoclonal antibodies that specifically bind to an amino acid sequence selected from the group consisting of SEQ ID NO: 496, 504, 505, 509-517, 522 and 541-550, together with
30 monoclonal antibodies comprising a complementarity determining region selected from the group consisting of SEQ ID NO: 502, 503 and 506-508.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

5 Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) an immunostimulant.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

10 Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with an immunostimulant.

15 Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that
20 specifically react with a prostate-specific protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described
25 above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a prostate-specific protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time
30 sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a prostate-specific protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expressed such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

10 Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be prostate cancer.

15

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

20

25

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain

30

embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached drawings. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

BRIEF DESCRIPTION OF THE DRAWINGS AND SEQUENCE IDENTIFIERS

Figure 1 illustrates the ability of T cells to kill fibroblasts expressing the representative prostate-specific polypeptide P502S, as compared to control fibroblasts. The percentage lysis is shown as a series of effector:target ratios, as indicated.

Figures 2A and 2B illustrate the ability of T cells to recognize cells expressing the representative prostate-specific polypeptide P502S. In each case, the number of γ -interferon spots is shown for different numbers of responders. In Figure 2A, data is presented for fibroblasts pulsed with the P2S-12 peptide, as compared to fibroblasts pulsed with a control E75 peptide. In Figure 2B, data is presented for fibroblasts expressing P502S, as compared to fibroblasts expressing HER-2/neu.

Figure 3 represents a peptide competition binding assay showing that the P1S#10 peptide, derived from P501S, binds HLA-A2. Peptide P1S#10 inhibits HLA-A2 restricted presentation of fluM58 peptide to CTL clone D150M58 in TNF release bioassay. D150M58 CTL is specific for the HLA-A2 binding influenza matrix peptide fluM58.

5 Figure 4 illustrates the ability of T cell lines generated from P1S#10 immunized mice to specifically lyse P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat A2Kb targets, as compared to EGFP-transduced Jurkat A2Kb. The percent lysis is shown as a series of effector to target ratios, as indicated.

10 Figure 5 illustrates the ability of a T cell clone to recognize and specifically lyse Jurkat A2Kb cells expressing the representative prostate-specific polypeptide P501S, thereby demonstrating that the P1S#10 peptide may be a naturally processed epitope of the P501S polypeptide.

Figures 6A and 6B are graphs illustrating the specificity of a CD8⁺ cell line (3A-1) for a representative prostate-specific antigen (P501S). Figure 6A shows the results of a ⁵¹Cr release 15 assay. The percent specific lysis is shown as a series of effector:target ratios, as indicated. Figure 6B shows the production of interferon-gamma by 3A-1 cells stimulated with autologous B-LCL transduced with P501S, at varying effector:target ratios as indicated.

Figure 7 is a Western blot showing the expression of P501S in baculovirus.

Figure 8 illustrates the results of epitope mapping studies on P501S.

20 Figure 9 is a schematic representation of the P501S protein showing the location of transmembrane domains and predicted intracellular and extracellular domains.

Figure 10 is a genomic map showing the location of the prostate genes P775P, P704P, B305D, P712P and P774P within the Cat Eye Syndrome region of chromosome 22q11.2

25 Figure 11 shows the results of an ELISA assay of antibody specificity to P501S peptides.

SEQ ID NO: 1 is the determined cDNA sequence for F1-13

SEQ ID NO: 2 is the determined 3' cDNA sequence for F1-12

SEQ ID NO: 3 is the determined 5' cDNA sequence for F1-12

SEQ ID NO: 4 is the determined 3' cDNA sequence for F1-16

30 SEQ ID NO: 5 is the determined 3' cDNA sequence for H1-1

SEQ ID NO: 6 is the determined 3' cDNA sequence for H1-9

SEQ ID NO: 7 is the determined 3' cDNA sequence for H1-4

- SEQ ID NO: 8 is the determined 3' cDNA sequence for J1-17
SEQ ID NO: 9 is the determined 5' cDNA sequence for J1-17
SEQ ID NO: 10 is the determined 3' cDNA sequence for L1-12
SEQ ID NO: 11 is the determined 5' cDNA sequence for L1-12
5 SEQ ID NO: 12 is the determined 3' cDNA sequence for N1-1862
SEQ ID NO: 13 is the determined 5' cDNA sequence for N1-1862
SEQ ID NO: 14 is the determined 3' cDNA sequence for J1-13
SEQ ID NO: 15 is the determined 5' cDNA sequence for J1-13
SEQ ID NO: 16 is the determined 3' cDNA sequence for J1-19
10 SEQ ID NO: 17 is the determined 5' cDNA sequence for J1-19
SEQ ID NO: 18 is the determined 3' cDNA sequence for J1-25
SEQ ID NO: 19 is the determined 5' cDNA sequence for J1-25
SEQ ID NO: 20 is the determined 5' cDNA sequence for J1-24
SEQ ID NO: 21 is the determined 3' cDNA sequence for J1-24
15 SEQ ID NO: 22 is the determined 5' cDNA sequence for K1-58
SEQ ID NO: 23 is the determined 3' cDNA sequence for K1-58
SEQ ID NO: 24 is the determined 5' cDNA sequence for K1-63
SEQ ID NO: 25 is the determined 3' cDNA sequence for K1-63
SEQ ID NO: 26 is the determined 5' cDNA sequence for L1-4
20 SEQ ID NO: 27 is the determined 3' cDNA sequence for L1-4
SEQ ID NO: 28 is the determined 5' cDNA sequence for L1-14
SEQ ID NO: 29 is the determined 3' cDNA sequence for L1-14
SEQ ID NO: 30 is the determined 3' cDNA sequence for J1-12
SEQ ID NO: 31 is the determined 3' cDNA sequence for J1-16
25 SEQ ID NO: 32 is the determined 3' cDNA sequence for J1-21
SEQ ID NO: 33 is the determined 3' cDNA sequence for K1-48
SEQ ID NO: 34 is the determined 3' cDNA sequence for K1-55
SEQ ID NO: 35 is the determined 3' cDNA sequence for L1-2
SEQ ID NO: 36 is the determined 3' cDNA sequence for L1-6
30 SEQ ID NO: 37 is the determined 3' cDNA sequence for N1-1858
SEQ ID NO: 38 is the determined 3' cDNA sequence for N1-1860
SEQ ID NO: 39 is the determined 3' cDNA sequence for N1-1861

SEQ ID NO: 40 is the determined 3' cDNA sequence for N1-1864

SEQ ID NO: 41 is the determined cDNA sequence for P5

SEQ ID NO: 42 is the determined cDNA sequence for P8

SEQ ID NO: 43 is the determined cDNA sequence for P9

5 SEQ ID NO: 44 is the determined cDNA sequence for P18

SEQ ID NO: 45 is the determined cDNA sequence for P20

SEQ ID NO: 46 is the determined cDNA sequence for P29

SEQ ID NO: 47 is the determined cDNA sequence for P30

SEQ ID NO: 48 is the determined cDNA sequence for P34

10 SEQ ID NO: 49 is the determined cDNA sequence for P36

SEQ ID NO: 50 is the determined cDNA sequence for P38

SEQ ID NO: 51 is the determined cDNA sequence for P39

SEQ ID NO: 52 is the determined cDNA sequence for P42

SEQ ID NO: 53 is the determined cDNA sequence for P47

15 SEQ ID NO: 54 is the determined cDNA sequence for P49

SEQ ID NO: 55 is the determined cDNA sequence for P50

SEQ ID NO: 56 is the determined cDNA sequence for P53

SEQ ID NO: 57 is the determined cDNA sequence for P55

SEQ ID NO: 58 is the determined cDNA sequence for P60

20 SEQ ID NO: 59 is the determined cDNA sequence for P64

SEQ ID NO: 60 is the determined cDNA sequence for P65

SEQ ID NO: 61 is the determined cDNA sequence for P73

SEQ ID NO: 62 is the determined cDNA sequence for P75

SEQ ID NO: 63 is the determined cDNA sequence for P76

25 SEQ ID NO: 64 is the determined cDNA sequence for P79

SEQ ID NO: 65 is the determined cDNA sequence for P84

SEQ ID NO: 66 is the determined cDNA sequence for P68

SEQ ID NO: 67 is the determined cDNA sequence for P80

SEQ ID NO: 68 is the determined cDNA sequence for P82

30 SEQ ID NO: 69 is the determined cDNA sequence for U1-3064

SEQ ID NO: 70 is the determined cDNA sequence for U1-3065

SEQ ID NO: 71 is the determined cDNA sequence for V1-3692

- SEQ ID NO: 72 is the determined cDNA sequence for 1A-3905
SEQ ID NO: 73 is the determined cDNA sequence for V1-3686
SEQ ID NO: 74 is the determined cDNA sequence for R1-2330
SEQ ID NO: 75 is the determined cDNA sequence for 1B-3976
5 SEQ ID NO: 76 is the determined cDNA sequence for V1-3679.
SEQ ID NO: 77 is the determined cDNA sequence for 1G-4736
SEQ ID NO: 78 is the determined cDNA sequence for 1G-4738
SEQ ID NO: 79 is the determined cDNA sequence for 1G-4741
SEQ ID NO: 80 is the determined cDNA sequence for 1G-4744
10 SEQ ID NO: 81 is the determined cDNA sequence for 1G-4734
SEQ ID NO: 82 is the determined cDNA sequence for 1H-4774
SEQ ID NO: 83 is the determined cDNA sequence for 1H-4781
SEQ ID NO: 84 is the determined cDNA sequence for 1H-4785
SEQ ID NO: 85 is the determined cDNA sequence for 1H-4787
15 SEQ ID NO: 86 is the determined cDNA sequence for 1H-4796
SEQ ID NO: 87 is the determined cDNA sequence for 1I-4807
SEQ ID NO: 88 is the determined cDNA sequence for 1I-4810
SEQ ID NO: 89 is the determined cDNA sequence for 1I-4811
SEQ ID NO: 90 is the determined cDNA sequence for 1J-4876
20 SEQ ID NO: 91 is the determined cDNA sequence for 1K-4884
SEQ ID NO: 92 is the determined cDNA sequence for 1K-4896
SEQ ID NO: 93 is the determined cDNA sequence for 1G-4761
SEQ ID NO: 94 is the determined cDNA sequence for 1G-4762
SEQ ID NO: 95 is the determined cDNA sequence for 1H-4766
25 SEQ ID NO: 96 is the determined cDNA sequence for 1H-4770
SEQ ID NO: 97 is the determined cDNA sequence for 1H-4771
SEQ ID NO: 98 is the determined cDNA sequence for 1H-4772
SEQ ID NO: 99 is the determined cDNA sequence for 1D-4297
SEQ ID NO: 100 is the determined cDNA sequence for 1D-4309
30 SEQ ID NO: 101 is the determined cDNA sequence for 1D-4278
SEQ ID NO: 102 is the determined cDNA sequence for 1D-4288
SEQ ID NO: 103 is the determined cDNA sequence for 1D-4283

SEQ ID NO: 104 is the determined cDNA sequence for 1D-4304

SEQ ID NO: 105 is the determined cDNA sequence for 1D-4296

SEQ ID NO: 106 is the determined cDNA sequence for 1D-4280

SEQ ID NO: 107 is the determined full length cDNA sequence for F1-12 (also referred to as P504S)

5

SEQ ID NO: 108 is the predicted amino acid sequence for F1-12

SEQ ID NO: 109 is the determined full length cDNA sequence for J1-17

SEQ ID NO: 110 is the determined full length cDNA sequence for L1-12 (also referred to as P501S)

SEQ ID NO: 111 is the determined full length cDNA sequence for N1-1862 (also referred to as

10 P503S)

SEQ ID NO: 112 is the predicted amino acid sequence for J1-17

SEQ ID NO: 113 is the predicted amino acid sequence for L1-12 (also referred to as P501S)

SEQ ID NO: 114 is the predicted amino acid sequence for N1-1862 (also referred to as P503S)

SEQ ID NO: 115 is the determined cDNA sequence for P89

15 SEQ ID NO: 116 is the determined cDNA sequence for P90

SEQ ID NO: 117 is the determined cDNA sequence for P92

SEQ ID NO: 118 is the determined cDNA sequence for P95

SEQ ID NO: 119 is the determined cDNA sequence for P98

SEQ ID NO: 120 is the determined cDNA sequence for P102

20 SEQ ID NO: 121 is the determined cDNA sequence for P110

SEQ ID NO: 122 is the determined cDNA sequence for P111

SEQ ID NO: 123 is the determined cDNA sequence for P114

SEQ ID NO: 124 is the determined cDNA sequence for P115

SEQ ID NO: 125 is the determined cDNA sequence for P116

25 SEQ ID NO: 126 is the determined cDNA sequence for P124

SEQ ID NO: 127 is the determined cDNA sequence for P126

SEQ ID NO: 128 is the determined cDNA sequence for P130

SEQ ID NO: 129 is the determined cDNA sequence for P133

SEQ ID NO: 130 is the determined cDNA sequence for P138

30 SEQ ID NO: 131 is the determined cDNA sequence for P143

SEQ ID NO: 132 is the determined cDNA sequence for P151

SEQ ID NO: 133 is the determined cDNA sequence for P156

- SEQ ID NO: 134 is the determined cDNA sequence for P157
- SEQ ID NO: 135 is the determined cDNA sequence for P166
- SEQ ID NO: 136 is the determined cDNA sequence for P176
- SEQ ID NO: 137 is the determined cDNA sequence for P178
- 5 SEQ ID NO: 138 is the determined cDNA sequence for P179
- SEQ ID NO: 139 is the determined cDNA sequence for P185
- SEQ ID NO: 140 is the determined cDNA sequence for P192
- SEQ ID NO: 141 is the determined cDNA sequence for P201
- SEQ ID NO: 142 is the determined cDNA sequence for P204
- 10 SEQ ID NO: 143 is the determined cDNA sequence for P208
- SEQ ID NO: 144 is the determined cDNA sequence for P211
- SEQ ID NO: 145 is the determined cDNA sequence for P213
- SEQ ID NO: 146 is the determined cDNA sequence for P219
- SEQ ID NO: 147 is the determined cDNA sequence for P237
- 15 SEQ ID NO: 148 is the determined cDNA sequence for P239
- SEQ ID NO: 149 is the determined cDNA sequence for P248
- SEQ ID NO: 150 is the determined cDNA sequence for P251
- SEQ ID NO: 151 is the determined cDNA sequence for P255
- SEQ ID NO: 152 is the determined cDNA sequence for P256
- 20 SEQ ID NO: 153 is the determined cDNA sequence for P259
- SEQ ID NO: 154 is the determined cDNA sequence for P260
- SEQ ID NO: 155 is the determined cDNA sequence for P263
- SEQ ID NO: 156 is the determined cDNA sequence for P264
- SEQ ID NO: 157 is the determined cDNA sequence for P266
- 25 SEQ ID NO: 158 is the determined cDNA sequence for P270
- SEQ ID NO: 159 is the determined cDNA sequence for P272
- SEQ ID NO: 160 is the determined cDNA sequence for P278
- SEQ ID NO: 161 is the determined cDNA sequence for P105
- SEQ ID NO: 162 is the determined cDNA sequence for P107
- 30 SEQ ID NO: 163 is the determined cDNA sequence for P137
- SEQ ID NO: 164 is the determined cDNA sequence for P194
- SEQ ID NO: 165 is the determined cDNA sequence for P195

- SEQ ID NO: 166 is the determined cDNA sequence for P196
SEQ ID NO: 167 is the determined cDNA sequence for P220
SEQ ID NO: 168 is the determined cDNA sequence for P234
SEQ ID NO: 169 is the determined cDNA sequence for P235
5 SEQ ID NO: 170 is the determined cDNA sequence for P243
SEQ ID NO: 171 is the determined cDNA sequence for P703P-DE1
SEQ ID NO: 172 is the predicted amino acid sequence for P703P-DE1
SEQ ID NO: 173 is the determined cDNA sequence for P703P-DE2
SEQ ID NO: 174 is the determined cDNA sequence for P703P-DE6
10 SEQ ID NO: 175 is the determined cDNA sequence for P703P-DE13
SEQ ID NO: 176 is the predicted amino acid sequence for P703P-DE13
SEQ ID NO: 177 is the determined cDNA sequence for P703P-DE14
SEQ ID NO: 178 is the predicted amino acid sequence for P703P-DE14

SEQ ID NO: 179 is the determined extended cDNA sequence for 1G-4736
15 SEQ ID NO: 180 is the determined extended cDNA sequence for 1G-4738
SEQ ID NO: 181 is the determined extended cDNA sequence for 1G-4741
SEQ ID NO: 182 is the determined extended cDNA sequence for 1G-4744
SEQ ID NO: 183 is the determined extended cDNA sequence for 1H-4774
SEQ ID NO: 184 is the determined extended cDNA sequence for 1H-4781
20 SEQ ID NO: 185 is the determined extended cDNA sequence for 1H-4785
SEQ ID NO: 186 is the determined extended cDNA sequence for 1H-4787
SEQ ID NO: 187 is the determined extended cDNA sequence for 1H-4796
SEQ ID NO: 188 is the determined extended cDNA sequence for 1I-4807
SEQ ID NO: 189 is the determined 3' cDNA sequence for 1I-4810
25 SEQ ID NO: 190 is the determined 3' cDNA sequence for 1I-4811
SEQ ID NO: 191 is the determined extended cDNA sequence for 1J-4876
SEQ ID NO: 192 is the determined extended cDNA sequence for 1K-4884
SEQ ID NO: 193 is the determined extended cDNA sequence for 1K-4896
SEQ ID NO: 194 is the determined extended cDNA sequence for 1G-4761
30 SEQ ID NO: 195 is the determined extended cDNA sequence for 1G-4762
SEQ ID NO: 196 is the determined extended cDNA sequence for 1H-4766
SEQ ID NO: 197 is the determined 3' cDNA sequence for 1H-4770

- SEQ ID NO: 198 is the determined 3' cDNA sequence for 1H-4771
- SEQ ID NO: 199 is the determined extended cDNA sequence for 1H-4772
- SEQ ID NO: 200 is the determined extended cDNA sequence for 1D-4309
- SEQ ID NO: 201 is the determined extended cDNA sequence for 1D.1-4278
- 5 SEQ ID NO: 202 is the determined extended cDNA sequence for 1D-4288
- SEQ ID NO: 203 is the determined extended cDNA sequence for 1D-4283
- SEQ ID NO: 204 is the determined extended cDNA sequence for 1D-4304
- SEQ ID NO: 205 is the determined extended cDNA sequence for 1D-4296
- SEQ ID NO: 206 is the determined extended cDNA sequence for 1D-4280
- 10 SEQ ID NO: 207 is the determined cDNA sequence for 10-d8fwd
- SEQ ID NO: 208 is the determined cDNA sequence for 10-H10con
- SEQ ID NO: 209 is the determined cDNA sequence for 11-C8rev
- SEQ ID NO: 210 is the determined cDNA sequence for 7.g6fwd
- SEQ ID NO: 211 is the determined cDNA sequence for 7.g6rev
- 15 SEQ ID NO: 212 is the determined cDNA sequence for 8-b5fwd
- SEQ ID NO: 213 is the determined cDNA sequence for 8-b5rev
- SEQ ID NO: 214 is the determined cDNA sequence for 8-b6fwd
- SEQ ID NO: 215 is the determined cDNA sequence for 8-b6 rev
- SEQ ID NO: 216 is the determined cDNA sequence for 8-d4fwd
- 20 SEQ ID NO: 217 is the determined cDNA sequence for 8-d9rev
- SEQ ID NO: 218 is the determined cDNA sequence for 8-g3fwd
- SEQ ID NO: 219 is the determined cDNA sequence for 8-g3rev
- SEQ ID NO: 220 is the determined cDNA sequence for 8-h11rev
- SEQ ID NO: 221 is the determined cDNA sequence for g-f12fwd
- 25 SEQ ID NO: 222 is the determined cDNA sequence for g-f3rev
- SEQ ID NO: 223 is the determined cDNA sequence for P509S
- SEQ ID NO: 224 is the determined cDNA sequence for P510S
- SEQ ID NO: 225 is the determined cDNA sequence for P703DE5
- SEQ ID NO: 226 is the determined cDNA sequence for 9-A11
- 30 SEQ ID NO: 227 is the determined cDNA sequence for 8-C6
- SEQ ID NO: 228 is the determined cDNA sequence for 8-H7
- SEQ ID NO: 229 is the determined cDNA sequence for JPTPN13

- SEQ ID NO: 230 is the determined cDNA sequence for JPTPN14
SEQ ID NO: 231 is the determined cDNA sequence for JPTPN23
SEQ ID NO: 232 is the determined cDNA sequence for JPTPN24
SEQ ID NO: 233 is the determined cDNA sequence for JPTPN25
5 SEQ ID NO: 234 is the determined cDNA sequence for JPTPN30
SEQ ID NO: 235 is the determined cDNA sequence for JPTPN34
SEQ ID NO: 236 is the determined cDNA sequence for PTPN35
SEQ ID NO: 237 is the determined cDNA sequence for JPTPN36
SEQ ID NO: 238 is the determined cDNA sequence for JPTPN38
10 SEQ ID NO: 239 is the determined cDNA sequence for JPTPN39
SEQ ID NO: 240 is the determined cDNA sequence for JPTPN40
SEQ ID NO: 241 is the determined cDNA sequence for JPTPN41
SEQ ID NO: 242 is the determined cDNA sequence for JPTPN42
SEQ ID NO: 243 is the determined cDNA sequence for JPTPN45
15 SEQ ID NO: 244 is the determined cDNA sequence for JPTPN46
SEQ ID NO: 245 is the determined cDNA sequence for JPTPN51
SEQ ID NO: 246 is the determined cDNA sequence for JPTPN56
SEQ ID NO: 247 is the determined cDNA sequence for PTPN64
SEQ ID NO: 248 is the determined cDNA sequence for JPTPN65
20 SEQ ID NO: 249 is the determined cDNA sequence for JPTPN67
SEQ ID NO: 250 is the determined cDNA sequence for JPTPN76
SEQ ID NO: 251 is the determined cDNA sequence for JPTPN84
SEQ ID NO: 252 is the determined cDNA sequence for JPTPN85
SEQ ID NO: 253 is the determined cDNA sequence for JPTPN86
25 SEQ ID NO: 254 is the determined cDNA sequence for JPTPN87
SEQ ID NO: 255 is the determined cDNA sequence for JPTPN88
SEQ ID NO: 256 is the determined cDNA sequence for JP1F1
SEQ ID NO: 257 is the determined cDNA sequence for JP1F2
SEQ ID NO: 258 is the determined cDNA sequence for JP1C2
30 SEQ ID NO: 259 is the determined cDNA sequence for JP1B1
SEQ ID NO: 260 is the determined cDNA sequence for JP1B2
SEQ ID NO: 261 is the determined cDNA sequence for JP1D3

- SEQ ID NO: 262 is the determined cDNA sequence for JP1A4
SEQ ID NO: 263 is the determined cDNA sequence for JP1F5
SEQ ID NO: 264 is the determined cDNA sequence for JP1E6
SEQ ID NO: 265 is the determined cDNA sequence for JP1D6
5 SEQ ID NO: 266 is the determined cDNA sequence for JP1B5
SEQ ID NO: 267 is the determined cDNA sequence for JP1A6
SEQ ID NO: 268 is the determined cDNA sequence for JP1E8
SEQ ID NO: 269 is the determined cDNA sequence for JP1D7
SEQ ID NO: 270 is the determined cDNA sequence for JP1D9
10 SEQ ID NO: 271 is the determined cDNA sequence for JP1C10
SEQ ID NO: 272 is the determined cDNA sequence for JP1A9
SEQ ID NO: 273 is the determined cDNA sequence for JP1F12
SEQ ID NO: 274 is the determined cDNA sequence for JP1E12
SEQ ID NO: 275 is the determined cDNA sequence for JP1D11
15 SEQ ID NO: 276 is the determined cDNA sequence for JP1C11
SEQ ID NO: 277 is the determined cDNA sequence for JP1C12
SEQ ID NO: 278 is the determined cDNA sequence for JP1B12
SEQ ID NO: 279 is the determined cDNA sequence for JP1A12
SEQ ID NO: 280 is the determined cDNA sequence for JP8G2
20 SEQ ID NO: 281 is the determined cDNA sequence for JP8H1
SEQ ID NO: 282 is the determined cDNA sequence for JP8H2
SEQ ID NO: 283 is the determined cDNA sequence for JP8A3
SEQ ID NO: 284 is the determined cDNA sequence for JP8A4
SEQ ID NO: 285 is the determined cDNA sequence for JP8C3
25 SEQ ID NO: 286 is the determined cDNA sequence for JP8G4
SEQ ID NO: 287 is the determined cDNA sequence for JP8B6
SEQ ID NO: 288 is the determined cDNA sequence for JP8D6
SEQ ID NO: 289 is the determined cDNA sequence for JP8F5
SEQ ID NO: 290 is the determined cDNA sequence for JP8A8
30 SEQ ID NO: 291 is the determined cDNA sequence for JP8C7
SEQ ID NO: 292 is the determined cDNA sequence for JP8D7
SEQ ID NO: 293 is the determined cDNA sequence for P8D8

- SEQ ID NO: 294 is the determined cDNA sequence for JP8E7
SEQ ID NO: 295 is the determined cDNA sequence for JP8F8
SEQ ID NO: 296 is the determined cDNA sequence for JP8G8.
SEQ ID NO: 297 is the determined cDNA sequence for JP8B10
5 SEQ ID NO: 298 is the determined cDNA sequence for JP8C10
SEQ ID NO: 299 is the determined cDNA sequence for JP8E9
SEQ ID NO: 300 is the determined cDNA sequence for JP8E10
SEQ ID NO: 301 is the determined cDNA sequence for JP8F9
SEQ ID NO: 302 is the determined cDNA sequence for JP8H9
10 SEQ ID NO: 303 is the determined cDNA sequence for JP8C12
SEQ ID NO: 304 is the determined cDNA sequence for JP8E11
SEQ ID NO: 305 is the determined cDNA sequence for JP8E12
SEQ ID NO: 306 is the amino acid sequence for the peptide PS2#12
-
- SEQ ID NO: 307 is the determined cDNA sequence for P711P
15 SEQ ID NO: 308 is the determined cDNA sequence for P712P
SEQ ID NO: 309 is the determined cDNA sequence for CLONE23
SEQ ID NO: 310 is the determined cDNA sequence for P774P
SEQ ID NO: 311 is the determined cDNA sequence for P775P
SEQ ID NO: 312 is the determined cDNA sequence for P715P
20 SEQ ID NO: 313 is the determined cDNA sequence for P710P
SEQ ID NO: 314 is the determined cDNA sequence for P767P
SEQ ID NO: 315 is the determined cDNA sequence for P768P
SEQ ID NO: 316-325 are the determined cDNA sequences of previously isolated genes
SEQ ID NO: 326 is the determined cDNA sequence for P703PDE5
25 SEQ ID NO: 327 is the predicted amino acid sequence for P703PDE5
SEQ ID NO: 328 is the determined cDNA sequence for P703P6.26
SEQ ID NO: 329 is the predicted amino acid sequence for P703P6.26
SEQ ID NO: 330 is the determined cDNA sequence for P703PX-23
SEQ ID NO: 331 is the predicted amino acid sequence for P703PX-23
30 SEQ ID NO: 332 is the determined full length cDNA sequence for P509S
SEQ ID NO: 333 is the determined extended cDNA sequence for P707P (also referred to as 11-C9)
SEQ ID NO: 334 is the determined cDNA sequence for P714P

SEQ ID NO: 335 is the determined cDNA sequence for P705P (also referred to as 9-F3)

SEQ ID NO: 336 is the predicted amino acid sequence for P705P

SEQ ID NO: 337 is the amino acid sequence of the peptide P1S#10

SEQ ID NO: 338 is the amino acid sequence of the peptide p5

5 SEQ ID NO: 339 is the predicted amino acid sequence of P509S

SEQ ID NO: 340 is the determined cDNA sequence for P778P

SEQ ID NO: 341 is the determined cDNA sequence for P786P

SEQ ID NO: 342 is the determined cDNA sequence for P789P

10 SEQ ID NO: 343 is the determined cDNA sequence for a clone showing homology to Homo sapiens MM46 mRNA

SEQ ID NO: 344 is the determined cDNA sequence for a clone showing homology to Homo sapiens TNF-alpha stimulated ABC protein (ABC50) mRNA

SEQ ID NO: 345 is the determined cDNA sequence for a clone showing homology to Homo sapiens mRNA for E-cadherin

15 SEQ ID NO: 346 is the determined cDNA sequence for a clone showing homology to Human nuclear-encoded mitochondrial serine hydroxymethyltransferase (SHMT)

SEQ ID NO: 347 is the determined cDNA sequence for a clone showing homology to Homo sapiens natural resistance-associated macrophage protein2 (NRAMP2)

20 SEQ ID NO: 348 is the determined cDNA sequence for a clone showing homology to Homo sapiens phosphoglucomutase-related protein (PGMRP)

SEQ ID NO: 349 is the determined cDNA sequence for a clone showing homology to Human mRNA for proteasome subunit p40

SEQ ID NO: 350 is the determined cDNA sequence for P777P

SEQ ID NO: 351 is the determined cDNA sequence for P779P

25 SEQ ID NO: 352 is the determined cDNA sequence for P790P

SEQ ID NO: 353 is the determined cDNA sequence for P784P

SEQ ID NO: 354 is the determined cDNA sequence for P776P

SEQ ID NO: 355 is the determined cDNA sequence for P780P

SEQ ID NO: 356 is the determined cDNA sequence for P544S

30 SEQ ID NO: 357 is the determined cDNA sequence for P745S

SEQ ID NO: 358 is the determined cDNA sequence for P782P

SEQ ID NO: 359 is the determined cDNA sequence for P783P

- SEQ ID NO: 360 is the determined cDNA sequence for unknown 17984
- SEQ ID NO: 361 is the determined cDNA sequence for P787P
- SEQ ID NO: 362 is the determined cDNA sequence for P788P
- SEQ ID NO: 363 is the determined cDNA sequence for unknown 17994
- 5 SEQ ID NO: 364 is the determined cDNA sequence for P781P
- SEQ ID NO: 365 is the determined cDNA sequence for P785P
- SEQ ID NO: 366-375 are the determined cDNA sequences for splice variants of B305D.
- SEQ ID NO: 376 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 366.
- 10 SEQ ID NO: 377 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 372.
- SEQ ID NO: 378 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 373.
- SEQ ID NO: 379 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 374.
- 15 SEQ ID NO: 380 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 375.
- SEQ ID NO: 381 is the determined cDNA sequence for B716P.
- SEQ ID NO: 382 is the determined full-length cDNA sequence for P711P.
- 20 SEQ ID NO: 383 is the predicted amino acid sequence for P711P.
- SEQ ID NO: 384 is the cDNA sequence for P1000C.
- SEQ ID NO: 385 is the cDNA sequence for CGI-82.
- SEQ ID NO: 386 is the cDNA sequence for 23320.
- SEQ ID NO: 387 is the cDNA sequence for CGI-69.
- 25 SEQ ID NO: 388 is the cDNA sequence for L-iditol-2-dehydrogenase.
- SEQ ID NO: 389 is the cDNA sequence for 23379.
- SEQ ID NO: 390 is the cDNA sequence for 23381.
- SEQ ID NO: 391 is the cDNA sequence for KIAA0122.
- SEQ ID NO: 392 is the cDNA sequence for 23399.
- 30 SEQ ID NO: 393 is the cDNA sequence for a previously identified gene.
- SEQ ID NO: 394 is the cDNA sequence for HCLBP.
- SEQ ID NO: 395 is the cDNA sequence for transglutaminase.

SEQ ID NO:396 is the cDNA sequence for a previously identified gene.

SEQ ID NO:397 is the cDNA sequence for PAP.

SEQ ID NO:398 is the cDNA sequence for Ets transcription factor PDEF.

SEQ ID NO:399 is the cDNA sequence for hTGR.

5 SEQ ID NO:400 is the cDNA sequence for KIAA0295.

SEQ ID NO:401 is the cDNA sequence for 22545.

SEQ ID NO:402 is the cDNA sequence for 22547.

SEQ ID NO:403 is the cDNA sequence for 22548.

SEQ ID NO:404 is the cDNA sequence for 22550.

10 SEQ ID NO:405 is the cDNA sequence for 22551.

SEQ ID NO:406 is the cDNA sequence for 22552.

SEQ ID NO:407 is the cDNA sequence for 22553.

SEQ ID NO:408 is the cDNA sequence for 22558.

SEQ ID NO:409 is the cDNA sequence for 22562.

15 SEQ ID NO:410 is the cDNA sequence for 22565.

SEQ ID NO:411 is the cDNA sequence for 22567.

SEQ ID NO:412 is the cDNA sequence for 22568.

SEQ ID NO:413 is the cDNA sequence for 22570.

SEQ ID NO:414 is the cDNA sequence for 22571.

20 SEQ ID NO:415 is the cDNA sequence for 22572.

SEQ ID NO:416 is the cDNA sequence for 22573.

SEQ ID NO:417 is the cDNA sequence for 22573.

SEQ ID NO:418 is the cDNA sequence for 22575.

SEQ ID NO:419 is the cDNA sequence for 22580.

25 SEQ ID NO:420 is the cDNA sequence for 22581.

SEQ ID NO:421 is the cDNA sequence for 22582.

SEQ ID NO:422 is the cDNA sequence for 22583.

SEQ ID NO:423 is the cDNA sequence for 22584.

SEQ ID NO:424 is the cDNA sequence for 22585.

30 SEQ ID NO:425 is the cDNA sequence for 22586.

SEQ ID NO:426 is the cDNA sequence for 22587.

SEQ ID NO:427 is the cDNA sequence for 22588.

- SEQ ID NO:428 is the cDNA sequence for 22589.
SEQ ID NO:429 is the cDNA sequence for 22590.
SEQ ID NO:430 is the cDNA sequence for 22591.
SEQ ID NO:431 is the cDNA sequence for 22592.
5 SEQ ID NO:432 is the cDNA sequence for 22593.
SEQ ID NO:433 is the cDNA sequence for 22594.
SEQ ID NO:434 is the cDNA sequence for 22595.
SEQ ID NO:435 is the cDNA sequence for 22596.
SEQ ID NO:436 is the cDNA sequence for 22847.
10 SEQ ID NO:437 is the cDNA sequence for 22848.
SEQ ID NO:438 is the cDNA sequence for 22849.
SEQ ID NO:439 is the cDNA sequence for 22851.
SEQ ID NO:440 is the cDNA sequence for 22852.
SEQ ID NO:441 is the cDNA sequence for 22853.
15 SEQ ID NO:442 is the cDNA sequence for 22854.
SEQ ID NO:443 is the cDNA sequence for 22855.
SEQ ID NO:444 is the cDNA sequence for 22856.
SEQ ID NO:445 is the cDNA sequence for 22857.
SEQ ID NO:446 is the cDNA sequence for 23601.
20 SEQ ID NO:447 is the cDNA sequence for 23602.
SEQ ID NO:448 is the cDNA sequence for 23605.
SEQ ID NO:449 is the cDNA sequence for 23606.
SEQ ID NO:450 is the cDNA sequence for 23612.
SEQ ID NO:451 is the cDNA sequence for 23614.
25 SEQ ID NO:452 is the cDNA sequence for 23618.
SEQ ID NO:453 is the cDNA sequence for 23622.
SEQ ID NO:454 is the cDNA sequence for folate hydrolase.
SEQ ID NO:455 is the cDNA sequence for LIM protein.
SEQ ID NO:456 is the cDNA sequence for a known gene.
30 SEQ ID NO:457 is the cDNA sequence for a known gene.
SEQ ID NO:458 is the cDNA sequence for a previously identified gene.
SEQ ID NO:459 is the cDNA sequence for 23045.

SEQ ID NO:460 is the cDNA sequence for 23032.

SEQ ID NO:461 is the cDNA sequence for 23054.

SEQ ID NO:462-467 are cDNA sequences for known genes.

SEQ ID NO:468-471 are cDNA sequences for P710P.

5 SEQ ID NO:472 is a cDNA sequence for P1001C.

SEQ ID NO: 473 is the determined cDNA sequence for a first splice variant of P775P (referred to as 27505).

SEQ ID NO: 474 is the determined cDNA sequence for a second splice variant of P775P (referred to as 19947).

10 SEQ ID NO: 475 is the determined cDNA sequence for a third splice variant of P775P (referred to as 19941).

SEQ ID NO: 476 is the determined cDNA sequence for a fourth splice variant of P775P (referred to as 19937).

SEQ ID NO: 477 is a first predicted amino acid sequence encoded by the sequence of SEQ ID NO:
15 474.

SEQ ID NO: 478 is a second predicted amino acid sequence encoded by the sequence of SEQ ID NO: 474.

SEQ ID NO: 479 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 475.

20 SEQ ID NO: 480 is a first predicted amino acid sequence encoded by the sequence of SEQ ID NO: 473.

SEQ ID NO: 481 is a second predicted amino acid sequence encoded by the sequence of SEQ ID NO: 473.

SEQ ID NO: 482 is a third predicted amino acid sequence encoded by the sequence of SEQ ID NO:
25 473.

SEQ ID NO: 483 is a fourth predicted amino acid sequence encoded by the sequence of SEQ ID NO: 473.

SEQ ID NO: 484 is the first 30 amino acids of the *M. tuberculosis* antigen Ra12.

SEQ ID NO: 485 is the PCR primer AW025.

30 SEQ ID NO: 486 is the PCR primer AW003.

SEQ ID NO: 487 is the PCR primer AW027.

SEQ ID NO: 488 is the PCR primer AW026.

SEQ ID NO: 489-501 are peptides employed in epitope mapping studies.

SEQ ID NO: 502 is the determined cDNA sequence of the complementarity determining region for the anti-P503S monoclonal antibody 20D4.

5 SEQ ID NO: 503 is the determined cDNA sequence of the complementarity determining region for the anti-P503S monoclonal antibody JA1.

SEQ ID NO: 504 & 505 are peptides employed in epitope mapping studies.

SEQ ID NO: 506 is the determined cDNA sequence of the complementarity determining region for the anti-P703P monoclonal antibody 8H2.

10 SEQ ID NO: 507 is the determined cDNA sequence of the complementarity determining region for the anti-P703P monoclonal antibody 7H8.

SEQ ID NO: 508 is the determined cDNA sequence of the complementarity determining region for the anti-P703P monoclonal antibody 2D4.

SEQ ID NO: 509-522 are peptides employed in epitope mapping studies.

15 SEQ ID NO: 523 is a mature form of P703P used to raise antibodies against P703P. SEQ ID NO: 524 is the putative full-length cDNA sequence of P703P.

SEQ ID NO: 525 is the predicted amino acid sequence encoded by SEQ ID NO: 524.

SEQ ID NO: 526 is the full-length cDNA sequence for P790P.

SEQ ID NO: 527 is the predicted amino acid sequence for P790P.

SEQ ID NO: 528 & 529 are PCR primers.

20 SEQ ID NO: 530 is the cDNA sequence of a splice variant of SEQ ID NO: 366.

SEQ ID NO: 531 is the cDNA sequence of the open reading frame of SEQ ID NO: 530.

SEQ ID NO: 532 is the predicted amino acid encoded by the sequence of SEQ ID NO: 531.

SEQ ID NO: 533 is the DNA sequence of a putative ORF of P775P.

SEQ ID NO: 534 is the predicted amino acid sequence encoded by SEQ ID NO: 533.

25 SEQ ID NO: 535 is a first full-length cDNA sequence for P510S.

SEQ ID NO: 536 is a second full-length cDNA sequence for P510S.

SEQ ID NO: 537 is the predicted amino acid sequence encoded by SEQ ID NO: 535.

SEQ ID NO: 538 is the predicted amino acid sequence encoded by SEQ ID NO: 536.

SEQ ID NO: 539 is the peptide P501S-370.

30 SEQ ID NO: 540 is the peptide P501S-376.

SEQ ID NO: 541-550 are epitopes of P501S.

SEQ ID NO: 551 corresponds to amino acids 543-553 of P501S.

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer. The compositions described herein may include prostate-specific polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (e.g., T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a prostate-specific protein or a variant thereof. A "prostate-specific protein" is a protein that is expressed in normal prostate and/or prostate tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a non-prostate normal tissue, as determined using a representative assay provided herein. Certain prostate-specific proteins are proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with prostate cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

The present invention is based on the discovery of human prostate-specific proteins. Sequences of polynucleotides encoding certain prostate-specific proteins, or portions thereof, are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536. Sequences of polypeptides comprising at least a portion of a prostate-specific protein are provided in SEQ ID NOs:112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380, 383, 477-483, 496, 504, 505, 519, 520, 522, 525, 527, 532, 534 and 537-550.

PROSTATE-SPECIFIC PROTEIN POLYNUCLEOTIDES

Any polynucleotide that encodes a prostate-specific protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred

polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a prostate-specific protein. More preferably, a polynucleotide encodes an immunogenic portion of a prostate-specific protein. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous sequence that encodes a prostate-specific protein or a portion thereof) or may comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity to a polynucleotide sequence that encodes a native prostate-specific protein or a portion thereof. The term "variants" also encompasses homologous genes of xenogenic origin.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, 40 to about 50, in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices

for detecting distant relationships. In Dayhoff, M.O. (ed.) Atlas of Protein Sequence and Structure, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenesis pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS* 5:151-153; Myers, E.W. and Muller W. (1988) *CABIOS* 4:11-17; Robinson, E.D. (1971) *Comb. Theor* 11:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol.* 4:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad. Sci. USA* 80:726-730.

Preferably, the "percentage of sequence identity" is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (*i.e.*, gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference sequences (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native prostate-specific protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such

as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in a prostate-specific than in normal tissue, as determined using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as prostate-specific cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion may be used to isolate a full length gene from a suitable library (*e.g.*, a prostate-specific cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (*e.g.*, by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (*see* Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into

a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments; using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (see Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids. Res.* 19:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (e.g., NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence. Full length DNA sequences may also be obtained by analysis of genomic fragments.

Certain nucleic acid sequences of cDNA molecules encoding at least a portion of a prostate-specific protein are provided in SEQ ID NO:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536.

Isolation of these polynucleotides is described below. Each of these prostate-specific proteins was overexpressed in prostate tumor tissue.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (see Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a prostate-specific protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (e.g., by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a prostate-specific polypeptide, and administering the transfected cells to the patient).

A portion of a sequence complementary to a coding sequence (i.e., an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (see Gee et al., *In Huber and Carr, Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (e.g., promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in length and still more preferably at least 30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3'

ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl- methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

5 Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector
10 will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for
15 therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (e.g., avian pox virus). The polynucleotides may also be administered as naked plasmid vectors.

20 Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of ordinary
25 skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane
30 vesicle). The preparation and use of such systems is well known in the art.

PROSTATE-SPECIFIC POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of a prostate-specific protein or a variant thereof, as described herein. As noted above, a "prostate-specific protein" is a protein that is expressed by normal prostate and/or prostate tumor cells. Proteins that are prostate-specific proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with prostate cancer. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a prostate-specific protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native prostate-specific protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the

immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ^{125}I -labeled Protein A.

As noted above, a composition may comprise a variant of a native prostate-specific protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native prostate-specific protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein. Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein. Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino

acids that have minimal influence on the immunogenicity, secondary structure and hydrophobic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (e.g., poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast, higher eukaryotic and plant cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. See Merrifield, *J. Am. Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known prostate-specific protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner),

preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are

located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see, for example, Stoute et al. New Engl. J. Med.*, 336:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The

lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the *LytA* gene; *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its

original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector
5 that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a prostate-specific protein. As used herein, an
10 antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a prostate-specific protein if it reacts at a detectable level (within, for example, an ELISA) with a prostate-specific protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding
15 constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about 10^3 L/mol. The binding constant may be determined using methods well known in the art.

20 Binding agents may be further capable of differentiating between patients with and without a cancer, such as prostate cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a prostate-specific protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals
25 without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (e.g., blood, sera, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the
30 above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Most preferably, antibodies employed in the inventive methods have the ability to induce lysis of tumor cells by activation of complement and mediation of antibody-dependent cellular cytotoxicity (ADCC). Antibodies of different classes and subclasses differ in these properties. For example, mouse antibodies of the IgG2a and IgG3 classes are capable of activating serum complement upon binding to target cells which express the antigen against which the antibodies were raised, and can mediate ADCC.

Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. See, e.g., Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (e.g., mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (i.e., reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells

and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

The preparation of mouse and rabbit monoclonal antibodies that specifically bind to polypeptides of the present invention is described in detail below. However, the antibodies of the present invention are not limited to those derived from mice. Human antibodies may also be employed in the inventive methods and may prove to be preferable. Such antibodies can be obtained using human hybridomas as described by Cote *et al.* (Monoclonal Antibodies and Cancer Therapy, Alan R. Lisa, p. 77, 1985). The present invention also encompasses antibodies made by recombinant means such as chimeric antibodies, wherein the variable region and constant region are derived from different species, and CDR-grafted antibodies, wherein the complementarity determining region is derived from a different species, as described in US Patents 4,816,567 and 5,225,539. Chimeric antibodies may be prepared by splicing genes for a mouse antibody molecule having a desired antigen specificity together with genes for a human antibody molecule having the desired biological activity, such as activation of human complement and mediation of ADCC (Morrison *et al. Proc. Natl. Acad. Sci. USA* 81:6851, 1984; Neuberger *et al. Nature* 312:604, 1984; Takeda *et al. Nature* 314:452, 1985).

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*,

Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y , ^{123}I , ^{125}I , ^{131}I , ^{186}Re , ^{188}Re , ^{211}At , and ^{212}Bi . Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, *Pseudomonas* exotoxin, *Shigella* toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (e.g., covalently bonded) to a suitable monoclonal antibody either directly or indirectly (e.g., via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (e.g., a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, e.g., U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (e.g., U.S. Patent No. 4,489,710, to

Spitler), by irradiation of a photolabile bond (e.g., U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (e.g., U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (e.g., U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (e.g., U.S. Patent No. 4,569,789, to Blattler et al.).

5 It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or
10 linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (e.g., U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (e.g., U.S. Patent
15 No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (e.g., U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating
20 compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of
25 a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

T CELLS

30 Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a prostate-specific protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral

blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the ISOLEX™ system, available from Nexell Therapeutics Inc., Irvine, CA (see also U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated

5 humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a prostate-specific polypeptide, polynucleotide encoding a prostate-specific polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a prostate-specific
10 polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a prostate-specific polypeptide if the T cells specifically proliferate, secrete cytokines or kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a
15 variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell
20 proliferation can be detected by measuring an increased rate of DNA synthesis (e.g., by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a prostate-specific polypeptide (100 ng/ml - 100 µg/ml, preferably 200 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of
25 the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (e.g., TNF or IFN-γ) is indicative of T cell activation (see Coligan et al., *Current Protocols in Immunology*, vol. 1, Wiley Interscience (Greene 1998)). T cells that have been activated in response to a prostate-specific polypeptide, polynucleotide or polypeptide-expressing APC may be CD4⁺ and/or CD8⁺. Prostate-specific protein-specific T cells may be expanded using
30 standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4⁺ or CD8⁺ T cells that proliferate in response to a prostate-specific polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a prostate-specific polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a prostate-specific polypeptide. Alternatively, one or more T cells that proliferate in the presence of a prostate-specific protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or binding agents disclosed herein may be incorporated into pharmaceutical compositions or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and an immunostimulant. An immunostimulant may be any substance that enhances an immune response to an exogenous antigen. Examples of immunostimulants include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems* 15:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression

in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (e.g., vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA* 91:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA* 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749, 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (e.g., polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (e.g., neutral buffered saline or phosphate buffered saline), carbohydrates (e.g., glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA

or glutathione, adjuvants (e.g., aluminum hydroxide) and/or preservatives. Alternatively, compositions of the present invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of immunostimulants may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (e.g., IFN- γ , TNF α , IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (e.g., IL-4, IL-5, IL-6 and IL-10) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; see US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example,

an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent
5 adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release
10 formulation (*i.e.*, a formulation such as a capsule, sponge or gel (composed of polysaccharides for example) that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix
15 and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical
20 compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the
25 antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or
30 progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy,

Ann. Rev. Med. 50:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*), their ability to take-up, process and present antigens with high efficiency, and their ability to activate naïve T cell responses. Dendritic cells may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (see Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF α to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF α , CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce differentiation, maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc γ receptor and mannose receptor. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (e.g., CD54 and CD11) and costimulatory molecules (e.g., CD40, CD80, CD86 and 4-1BB).

APCs may generally be transfected with a polynucleotide encoding a prostate-specific protein (or portion or other variant thereof) such that the prostate-specific polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection

that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the prostate-specific polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (e.g., vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (e.g., a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as prostate cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as CD8⁺ cytotoxic T lymphocytes and CD4⁺ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer

cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate
5 antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent
10 stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte,
15 fibroblast or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies
20 have shown that cultured effector cells can be induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see, for example, Cheever et al., Immunological Reviews 157:177, 1997*).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back
25 into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established
30 using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g., intracutaneous, intramuscular, intravenous or subcutaneous*), intranasally (*e.g., by aspiration*) or orally. Preferably, between 1 and 10 doses may be administered

over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 25 μ g to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a prostate-specific protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more prostate-specific proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as prostate cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer.

In general, a prostate tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g., Harlow and Lane, Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full length prostate-specific proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a

membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10 μ g, and preferably about 100 ng to about 1 μ g, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20TM (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with prostate cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by

assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as prostate cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (i.e., sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (i.e., the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along

the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μ g, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use prostate-specific polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such prostate-specific protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a prostate-specific protein in a biological sample. Within certain methods, a biological sample comprising CD4⁺ and/or CD8⁺ T cells isolated from a patient is incubated with a prostate-specific polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that

expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may
5 be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with prostate-specific polypeptide (*e.g.*, 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of prostate-specific polypeptide to serve as a control. For CD4⁺ T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8⁺ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater
10 and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a prostate-specific protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to
15 amplify a portion of a prostate-specific cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the prostate-specific protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a prostate-specific protein may be used in a hybridization
20 assay to detect the presence of polynucleotide encoding the protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a prostate-specific protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in
25 length. Preferably, oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous nucleotides, more preferably at least 15
30 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536. Techniques for both PCR based assays and hybridization assays

are well known in the art (see, for example, Mullis et al., *Cold Spring Harbor Symp. Quant. Biol.*, 51:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple prostate-specific protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a prostate-specific protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a prostate-specific protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a prostate-specific protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a prostate-specific protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLES

EXAMPLE 1

ISOLATION AND CHARACTERIZATION OF PROSTATE-SPECIFIC POLYPEPTIDES

This Example describes the isolation of certain prostate-specific polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library was constructed from prostate tumor poly A⁺ RNA using a Superscript Plasmid System for cDNA Synthesis and Plasmid Cloning kit (BRL Life Technologies, Gaithersburg, MD 20897) following the manufacturer's protocol. Specifically, prostate tumor tissues were homogenized with polytron (Kinematica, Switzerland) and total RNA was extracted using Trizol reagent (BRL Life Technologies) as directed by the manufacturer. The poly A⁺ RNA was then purified using a Qiagen oligotex spin-column mRNA purification kit (Qiagen, Santa Clarita, CA 91355) according to the manufacturer's protocol. First-strand cDNA was synthesized using the NotI/Oligo-dT18 primer. Double-stranded cDNA was synthesized, ligated with EcoRI/BAXI adaptors (Invitrogen, San Diego, CA) and digested with NotI. Following size fractionation with Chroma Spin-1000 columns (Clontech, Palo Alto, CA), the cDNA was ligated into the EcoRI/NotI site of pCDNA3.1 (Invitrogen) and transformed into ElectroMax *E. coli* DH10B cells (BRL Life Technologies) by electroporation.

Using the same procedure, a normal human pancreas cDNA expression library was prepared from a pool of six tissue specimens (Clontech). The cDNA libraries were characterized by determining the number of independent colonies, the percentage of clones that carried insert, the average insert size and by sequence analysis. The prostate tumor library contained 1.64×10^7 independent colonies, with 70% of clones having an insert and the average insert size being 1745 base pairs. The normal pancreas cDNA library contained 3.3×10^6 independent colonies, with 69% of clones having inserts and the average insert size being 1120 base pairs. For both libraries, sequence analysis showed that the majority of clones had a full length cDNA sequence and were synthesized from mRNA, with minimal rRNA and mitochondrial DNA contamination.

cDNA library subtraction was performed using the above prostate tumor and normal pancreas cDNA libraries, as described by Hara *et al.* (*Blood*, 84:189-199, 1994) with some modifications. Specifically, a prostate tumor-specific subtracted cDNA library was generated as

follows. Normal pancreas cDNA library (70 µg) was digested with EcoRI, NotI, and SfuI, followed by a filling-in reaction with DNA polymerase Klenow fragment. After phenol-chloroform extraction and ethanol precipitation, the DNA was dissolved in 100 µl of H₂O, heat-denatured and mixed with 100 µl (100 µg) of Photoprobe biotin (Vector Laboratories, Burlingame, CA). As
5 recommended by the manufacturer, the resulting mixture was irradiated with a 270 W sunlamp on ice for 20 minutes. Additional Photoprobe biotin (50 µl) was added and the biotinylation reaction was repeated. After extraction with butanol five times, the DNA was ethanol-precipitated and dissolved in 23 µl H₂O to form the driver DNA.

To form the tracer DNA, 10 µg prostate tumor cDNA library was digested with
10 BamHI and XhoI, phenol chloroform extracted and passed through Chroma spin-400 columns (Clontech). Following ethanol precipitation, the tracer DNA was dissolved in 5 µl H₂O. Tracer DNA was mixed with 15 µl driver DNA and 20 µl of 2 x hybridization buffer (1.5 M NaCl/10 mM EDTA/50 mM HEPES pH 7.5/0.2% sodium dodecyl sulfate), overlaid with mineral oil, and heat-denatured completely. The sample was immediately transferred into a 68 °C water bath and
15 incubated for 20 hours (long hybridization [LH]). The reaction mixture was then subjected to a streptavidin treatment followed by phenol/chloroform extraction. This process was repeated three more times. Subtracted DNA was precipitated, dissolved in 12 µl H₂O, mixed with 8 µl driver DNA and 20 µl of 2 x hybridization buffer, and subjected to a hybridization at 68 °C for 2 hours (short hybridization [SH]). After removal of biotinylated double-stranded DNA, subtracted cDNA
20 was ligated into BamHI/XhoI site of chloramphenicol resistant pBCSK⁺ (Stratagene, La Jolla, CA 92037) and transformed into ElectroMax *E. coli* DH10B cells by electroporation to generate a prostate tumor specific subtracted cDNA library (referred to as "prostate subtraction 1").

To analyze the subtracted cDNA library, plasmid DNA was prepared from 100 independent clones, randomly picked from the subtracted prostate tumor specific library and
25 grouped based on insert size. Representative cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A (Foster City, CA). Six cDNA clones, hereinafter referred to as F1-13, F1-12, F1-16, H1-1, H1-9 and H1-4, were shown to be abundant in the subtracted prostate-specific cDNA library. The determined 3' and 5' cDNA sequences for F1-12 are provided in SEQ ID NO: 2 and 3, respectively,
30 with determined 3' cDNA sequences for F1-13, F1-16, H1-1, H1-9 and H1-4 being provided in SEQ ID NO: 1 and 4-7, respectively.

The cDNA sequences for the isolated clones were compared to known sequences in the gene bank using the EMBL and GenBank databases (release 96). Four of the prostate tumor cDNA clones, F1-13, F1-16, H1-1, and H1-4, were determined to encode the following previously identified proteins: prostate specific antigen (PSA), human glandular kallikrein, human tumor expression enhanced gene, and mitochondria cytochrome C oxidase subunit II. H1-9 was found to be identical to a previously identified human autonomously replicating sequence. No significant homologies to the cDNA sequence for F1-12 were found.

Subsequent studies led to the isolation of a full-length cDNA sequence for F1-12. This sequence is provided in SEQ ID NO: 107, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 108.

To clone less abundant prostate tumor specific genes, cDNA library subtraction was performed by subtracting the prostate tumor cDNA library described above with the normal pancreas cDNA library and with the three most abundant genes in the previously subtracted prostate tumor specific cDNA library: human glandular kallikrein, prostate specific antigen (PSA), and mitochondria cytochrome C oxidase subunit II. Specifically, 1 μ g each of human glandular kallikrein, PSA and mitochondria cytochrome C oxidase subunit II cDNAs in pCDNA3.1 were added to the driver DNA and subtraction was performed as described above to provide a second subtracted cDNA library hereinafter referred to as the "subtracted prostate tumor specific cDNA library with spike".

Twenty-two cDNA clones were isolated from the subtracted prostate tumor specific cDNA library with spike. The determined 3' and 5' cDNA sequences for the clones referred to as J1-17, L1-12, N1-1862, J1-13, J1-19, J1-25, J1-24, K1-58, K1-63, L1-4 and L1-14 are provided in SEQ ID NOS: 8-9, 10-11, 12-13, 14-15, 16-17, 18-19, 20-21, 22-23, 24-25, 26-27 and 28-29, respectively. The determined 3' cDNA sequences for the clones referred to as J1-12, J1-16, J1-21, K1-48, K1-55, L1-2, L1-6, N1-1858, N1-1860, N1-1861, N1-1864 are provided in SEQ ID NOS: 30-40, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to three of the five most abundant DNA species, (J1-17, L1-12 and N1-1862; SEQ ID NOS: 8-9, 10-11 and 12-13, respectively). Of the remaining two most abundant species, one (J1-12; SEQ ID NO:30) was found to be identical to the previously identified human pulmonary surfactant-associated protein, and the other (K1-48; SEQ ID NO:33) was determined to have some homology to *R. norvegicus* mRNA for 2-arylpropionyl-CoA epimerase. Of the 17 less abundant cDNA clones isolated from the subtracted prostate tumor specific cDNA

library with spike, four (J1-16, K1-55, L1-6 and N1-1864; SEQ ID NOS: 31, 34, 36 and 40, respectively) were found to be identical to previously identified sequences, two (J1-21 and N1-1860; SEQ ID NOS: 32 and 38, respectively) were found to show some homology to non-human sequences, and two (L1-2 and N1-1861; SEQ ID NOS: 35 and 39, respectively) were found to show
5 some homology to known human sequences. No significant homologies were found to the polypeptides J1-13, J1-19, J1-24, J1-25, K1-58, K1-63, L1-4, L1-14 (SEQ ID NOS: 14-15, 16-17, 20-21, 18-19, 22-23, 24-25, 26-27, 28-29, respectively).

Subsequent studies led to the isolation of full length cDNA sequences for J1-17, L1-12 and N1-1862 (SEQ ID NOS: 109-111, respectively). The corresponding predicted amino acid
10 sequences are provided in SEQ ID NOS: 112-114. L1-12 is also referred to as P501S.

In a further experiment, four additional clones were identified by subtracting a prostate tumor cDNA library with normal prostate cDNA prepared from a pool of three normal prostate poly A+ RNA (referred to as "prostate subtraction 2"). The determined cDNA sequences for these clones, hereinafter referred to as U1-3064, U1-3065, V1-3692 and 1A-3905, are provided
15 in SEQ ID NO: 69-72, respectively. Comparison of the determined sequences with those in the gene bank revealed no significant homologies to U1-3065.

A second subtraction with spike (referred to as "prostate subtraction spike 2") was performed by subtracting a prostate tumor specific cDNA library with spike with normal pancreas cDNA library and further spiked with PSA, J1-17, pulmonary surfactant-associated protein,
20 mitochondrial DNA, cytochrome c oxidase subunit II, N1-1862, autonomously replicating sequence, L1-12 and tumor expression enhanced gene. Four additional clones, hereinafter referred to as V1-3686, R1-2330, 1B-3976 and V1-3679, were isolated. The determined cDNA sequences for these clones are provided in SEQ ID NO: 73-76, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to V1-3686 and R1-2330.

25 Further analysis of the three prostate subtractions described above (prostate subtraction 2, subtracted prostate tumor specific cDNA library with spike, and prostate subtraction spike 2) resulted in the identification of sixteen additional clones, referred to as 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1G-4734, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4810, 1I-4811, 1J-4876, 1K-4884 and 1K-4896. The determined cDNA sequences for these clones are provided in
30 SEQ ID NOS: 77-92, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to 1G-4741, 1G-4734, 1I-4807, 1J-4876 and 1K-4896 (SEQ ID NOS: 79, 81, 87, 90 and 92, respectively). Further analysis of the isolated

clones led to the determination of extended cDNA sequences for 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4807, 1J-4876, 1K-4884 and 1K-4896, provided in SEQ ID NOS: 179-188 and 191-193, respectively, and to the determination of additional partial cDNA sequences for 1I-4810 and 1I-4811, provided in SEQ ID NOS: 189 and 190, respectively.

Additional studies with prostate subtraction spike 2 resulted in the isolation of three more clones. Their sequences were determined as described above and compared to the most recent GenBank. All three clones were found to have homology to known genes, which are Cysteine-rich protein, KIAA0242, and KIAA0280 (SEQ ID NO: 317, 319, and 320, respectively). Further analysis of these clones by Synteni microarray (Synteni, Palo Alto, CA) demonstrated that all three clones were over-expressed in most prostate tumors and prostate BPH, as well as in the majority of normal prostate tissues tested, but low expression in all other normal tissues.

An additional subtraction was performed by subtracting a normal prostate cDNA library with normal pancreas cDNA (referred to as "prostate subtraction 3"). This led to the identification of six additional clones referred to as 1G-4761, 1G-4762, 1H-4766, 1H-4770, 1H-4771 and 1H-4772 (SEQ ID NOS: 93-98). Comparison of these sequences with those in the gene bank revealed no significant homologies to 1G-4761 and 1H-4771 (SEQ ID NOS: 93 and 97, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4761, 1G-4762, 1H-4766 and 1H-4772 provided in SEQ ID NOS: 194-196 and 199, respectively, and to the determination of additional partial cDNA sequences for 1H-4770 and 1H-4771, provided in SEQ ID NOS: 197 and 198, respectively.

Subtraction of a prostate tumor cDNA library, prepared from a pool of polyA+ RNA from three prostate cancer patients, with a normal pancreas cDNA library (prostate subtraction 4) led to the identification of eight clones, referred to as 1D-4297, 1D-4309, 1D-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280 (SEQ ID NOS: 99-107). These sequences were compared to those in the gene bank as described above. No significant homologies were found to 1D-4283 and 1D-4304 (SEQ ID NOS: 103 and 104, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1D-4309, 1D-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280, provided in SEQ ID NOS: 200-206, respectively.

cDNA clones isolated in prostate subtraction 1 and prostate subtraction 2, described above, were colony PCR amplified and their mRNA expression levels in prostate tumor, normal prostate and in various other normal tissues were determined using microarray technology (Synteni,

Palo Alto, CA). Briefly, the PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed, and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes, the slides scanned and fluorescence intensity was measured. This intensity correlates with the hybridization intensity. Two clones (referred to as P509S and P510S) were found to be over-expressed in prostate tumor and normal prostate and expressed at low levels in all other normal tissues tested (liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon). The determined cDNA sequences for P509S and P510S are provided in SEQ ID NO: 223 and 224, respectively. Comparison of these sequences with those in the gene bank as described above, revealed some homology to previously identified ESTs.

Additional studies led to the isolation of the full-length cDNA sequence for P509S. This sequence is provided in SEQ ID NO: 332, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 339. Two variant full-length cDNA sequences for P510S are provided in SEQ ID NO: 535 and 536, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 537 and 538, respectively.

EXAMPLE 2

DETERMINATION OF TISSUE SPECIFICITY OF PROSTATE-SPECIFIC POLYPEPTIDES

Using gene specific primers, mRNA expression levels for the representative prostate-specific polypeptides F1-16, H1-1, J1-17 (also referred to as P502S), L1-12 (also referred to as P501S), F1-12 (also referred to as P504S) and N1-1862 (also referred to as P503S) were examined in a variety of normal and tumor tissues using RT-PCR.

Briefly, total RNA was extracted from a variety of normal and tumor tissues using Trizol reagent as described above. First strand synthesis was carried out using 1-2 μ g of total RNA with SuperScript II reverse transcriptase (BRL Life Technologies) at 42 °C for one hour. The cDNA was then amplified by PCR with gene-specific primers. To ensure the semi-quantitative nature of the RT-PCR, β -actin was used as an internal control for each of the tissues examined. First, serial dilutions of the first strand cDNAs were prepared and RT-PCR assays were performed using β -actin specific primers. A dilution was then chosen that enabled the linear range amplification of the β -actin template and which was sensitive enough to reflect the differences in the initial copy numbers. Using these conditions, the β -actin levels were determined for each

reverse transcription reaction from each tissue. DNA contamination was minimized by DNase treatment and by assuring a negative PCR result when using first strand cDNA that was prepared without adding reverse transcriptase.

mRNA Expression levels were examined in four different types of tumor tissue (prostate tumor from 2 patients, breast tumor from 3 patients, colon tumor, lung tumor), and sixteen different normal tissues, including prostate, colon, kidney, liver, lung, ovary, pancreas, skeletal muscle, skin, stomach, testes, bone marrow and brain. F1-16 was found to be expressed at high levels in prostate tumor tissue, colon tumor and normal prostate, and at lower levels in normal liver, skin and testes, with expression being undetectable in the other tissues examined. H1-1 was found to be expressed at high levels in prostate tumor, lung tumor, breast tumor, normal prostate, normal colon and normal brain, at much lower levels in normal lung, pancreas, skeletal muscle, skin, small intestine, bone marrow, and was not detected in the other tissues tested. J1-17 (P502S) and L1-12 (P501S) appear to be specifically over-expressed in prostate, with both genes being expressed at high levels in prostate tumor and normal prostate but at low to undetectable levels in all the other tissues examined. N1-1862 (P503S) was found to be over-expressed in 60% of prostate tumors and detectable in normal colon and kidney. The RT-PCR results thus indicate that F1-16, H1-1, J1-17 (P502S), N1-1862 (P503S) and L1-12 (P501S) are either prostate specific or are expressed at significantly elevated levels in prostate.

Further RT-PCR studies showed that F1-12 (P504S) is over-expressed in 60% of prostate tumors, detectable in normal kidney but not detectable in all other tissues tested. Similarly, R1-2330 was shown to be over-expressed in 40% of prostate tumors, detectable in normal kidney and liver, but not detectable in all other tissues tested. U1-3064 was found to be over-expressed in 60% of prostate tumors, and also expressed in breast and colon tumors, but was not detectable in normal tissues.

RT-PCR characterization of R1-2330, U1-3064 and 1D-4279 showed that these three antigens are over-expressed in prostate and/or prostate tumors.

Northern analysis with four prostate tumors, two normal prostate samples, two BPH prostates, and normal colon, kidney, liver, lung, pancreas, skeletal muscle, brain, stomach, testes, small intestine and bone marrow, showed that L1-12 (P501S) is over-expressed in prostate tumors and normal prostate, while being undetectable in other normal tissues tested. J1-17 (P502S) was detected in two prostate tumors and not in the other tissues tested. N1-1862 (P503S) was found to be over-expressed in three prostate tumors and to be expressed in normal prostate, colon and kidney,

but not in other tissues tested. F1-12 (P504S) was found to be highly expressed in two prostate tumors and to be undetectable in all other tissues tested.

The microarray technology described above was used to determine the expression levels of representative antigens described herein in prostate tumor, breast tumor and the following normal tissues: prostate, liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon. L1-12 (P501S) was found to be over-expressed in normal prostate and prostate tumor, with some expression being detected in normal skeletal muscle. Both J1-12 and F1-12 (P504S) were found to be over-expressed in prostate tumor, with expression being lower or undetectable in all other tissues tested. N1-1862 (P503S) was found to be expressed at high levels in prostate tumor and normal prostate, and at low levels in normal large intestine and normal colon, with expression being undetectable in all other tissues tested. R1-2330 was found to be over-expressed in prostate tumor and normal prostate, and to be expressed at lower levels in all other tissues tested. 1D-4279 was found to be over-expressed in prostate tumor and normal prostate, expressed at lower levels in normal spinal cord, and to be undetectable in all other tissues tested.

Further microarray analysis to specifically address the extent to which P501S (SEQ ID NO: 110) was expressed in breast tumor revealed moderate over-expression not only in breast tumor, but also in metastatic breast tumor (2/31), with negligible to low expression in normal tissues. This data suggests that P501S may be over-expressed in various breast tumors as well as in prostate tumors.

The expression levels of 32 ESTs (expressed sequence tags) described by Vasmatzis *et al.* (*Proc. Natl. Acad. Sci. USA* 95:300-304, 1998) in a variety of tumor and normal tissues were examined by microarray technology as described above. Two of these clones (referred to as P1000C and P1001C) were found to be over-expressed in prostate tumor and normal prostate, and expressed at low to undetectable levels in all other tissues tested (normal aorta, thymus, resting and activated PBMC, epithelial cells, spinal cord, adrenal gland, fetal tissues, skin, salivary gland, large intestine, bone marrow, liver, lung, dendritic cells, stomach, lymph nodes, brain, heart, small intestine, skeletal muscle, colon and kidney). The determined cDNA sequences for P1000C and P1001C are provided in SEQ ID NO: 384 and 472, respectively. The sequence of P1001C was found to show some homology to the previously isolated Human mRNA for JM27 protein. No significant homologies were found to the sequence of P1000C.

The expression of the polypeptide encoded by the full length cDNA sequence for F1-12 (also referred to as P504S; SEQ ID NO: 108) was investigated by immunohistochemical analysis. Rabbit-anti-P504S polyclonal antibodies were generated against the full length P504S protein by standard techniques. Subsequent isolation and characterization of the polyclonal antibodies were also performed by techniques well known in the art. Immunohistochemical analysis showed that the P504S polypeptide was expressed in 100% of prostate carcinoma samples tested (n=5).

The rabbit-anti-P504S polyclonal antibody did not appear to label benign prostate cells with the same cytoplasmic granular staining, but rather with light nuclear staining. Analysis of normal tissues revealed that the encoded polypeptide was found to be expressed in some, but not all normal human tissues. Positive cytoplasmic staining with rabbit-anti-P504S polyclonal antibody was found in normal human kidney, liver, brain, colon and lung-associated macrophages, whereas heart and bone marrow were negative.

This data indicates that the P504S polypeptide is present in prostate cancer tissues, and that there are qualitative and quantitative differences in the staining between benign prostatic hyperplasia tissues and prostate cancer tissues, suggesting that this polypeptide may be detected selectively in prostate tumors and therefore be useful in the diagnosis of prostate cancer.

EXAMPLE 3

ISOLATION AND CHARACTERIZATION OF PROSTATE-SPECIFIC POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA subtraction library, containing cDNA from normal prostate subtracted with ten other normal tissue cDNAs (brain, heart, kidney, liver, lung, ovary, placenta, skeletal muscle, spleen and thymus) and then submitted to a first round of PCR amplification, was purchased from Clontech. This library was subjected to a second round of PCR amplification, following the manufacturer's protocol. The resulting cDNA fragments were subcloned into the vector pT7 Blue T-vector (Novagen, Madison, WI) and transformed into XL-1 Blue MRF' *E. coli* (Stratagene). DNA was isolated from independent clones and sequenced using a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A.

Fifty-nine positive clones were sequenced. Comparison of the DNA sequences of these clones with those in the gene bank, as described above, revealed no significant homologies to 25 of these clones, hereinafter referred to as P5, P8, P9, P18, P20, P30, P34, P36, P38, P39, P42, P49, P50, P53, P55, P60, P64, P65, P73, P75, P76, P79 and P84. The determined cDNA sequences for these clones are provided in SEQ ID NO: 41-45, 47-52 and 54-65, respectively. P29, P47, P68, P80 and P82 (SEQ ID NO: 46, 53 and 66-68, respectively) were found to show some degree of homology to previously identified DNA sequences. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in prostate.

Further studies using the PCR-based methodology described above resulted in the isolation of more than 180 additional clones, of which 23 clones were found to show no significant homologies to known sequences. The determined cDNA sequences for these clones are provided in SEQ ID NO: 115-123, 127, 131, 137, 145, 147-151, 153, 156-158 and 160. Twenty-three clones (SEQ ID NO: 124-126, 128-130, 132-136, 138-144, 146, 152, 154, 155 and 159) were found to show some homology to previously identified ESTs. An additional ten clones (SEQ ID NO: 161-170) were found to have some degree of homology to known genes. Larger cDNA clones containing the P20 sequence represent splice variants of a gene referred to as P703P. The determined DNA sequence for the variants referred to as DE1, DE13 and DE14 are provided in SEQ ID NOS: 171, 175 and 177, respectively, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 172, 176 and 178, respectively. The determined cDNA sequence for an extended spliced form of P703 is provided in SEQ ID NO: 225. The DNA sequences for the splice variants referred to as DE2 and DE6 are provided in SEQ ID NOS: 173 and 174, respectively.

mRNA Expression levels for representative clones in tumor tissues (prostate (n=5), breast (n=2), colon and lung) normal tissues (prostate (n=5), colon, kidney, liver, lung (n=2), ovary (n=2), skeletal muscle, skin, stomach, small intestine and brain), and activated and non-activated PBMC was determined by RT-PCR as described above. Expression was examined in one sample of each tissue type unless otherwise indicated.

P9 was found to be highly expressed in normal prostate and prostate tumor compared to all normal tissues tested except for normal colon which showed comparable expression. P20, a portion of the P703P gene, was found to be highly expressed in normal prostate and prostate tumor, compared to all twelve normal tissues tested. A modest increase in expression of P20 in breast tumor (n=2), colon tumor and lung tumor was seen compared to all normal tissues except lung (1 of

2). Increased expression of P18 was found in normal prostate, prostate tumor and breast tumor compared to other normal tissues except lung and stomach. A modest increase in expression of P5 was observed in normal prostate compared to most other normal tissues. However, some elevated expression was seen in normal lung and PBMC. Elevated expression of P5 was also observed in prostate tumors (2 of 5), breast tumor and one lung tumor sample. For P30, similar expression levels were seen in normal prostate and prostate tumor, compared to six of twelve other normal tissues tested. Increased expression was seen in breast tumors, one lung tumor sample and one colon tumor sample, and also in normal PBMC. P29 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to the majority of normal tissues. However, substantial expression of P29 was observed in normal colon and normal lung (2 of 2). P80 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to all other normal tissues tested, with increased expression also being seen in colon tumor.

Further studies resulted in the isolation of twelve additional clones, hereinafter referred to as 10-d8, 10-h10, 11-c8, 7-g6, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3, 8-h11, 9-f12 and 9-f3. The determined DNA sequences for 10-d8, 10-h10, 11-c8, 8-d4, 8-d9, 8-h11, 9-f12 and 9-f3 are provided in SEQ ID NO: 207, 208, 209, 216, 217, 220, 221 and 222, respectively. The determined forward and reverse DNA sequences for 7-g6, 8-b5, 8-b6 and 8-g3 are provided in SEQ ID NO: 210 and 211; 212 and 213; 214 and 215; and 218 and 219, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to the sequence of 9-f3. The clones 10-d8, 11-c8 and 8-h11 were found to show some homology to previously isolated ESTs, while 10-h10, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3 and 9-f12 were found to show some homology to previously identified genes. Further characterization of 7-G6 and 8-G3 showed identity to the known genes PAP and PSA, respectively.

mRNA expression levels for these clones were determined using the micro-array technology described above. The clones 7-G6, 8-G3, 8-B5, 8-B6, 8-D4, 8-D9, 9-F3, 9-F12, 9-H3, 10-A2, 10-A4, 11-C9 and 11-F2 were found to be over-expressed in prostate tumor and normal prostate, with expression in other tissues tested being low or undetectable. Increased expression of 8-F11 was seen in prostate tumor and normal prostate, bladder, skeletal muscle and colon. Increased expression of 10-H10 was seen in prostate tumor and normal prostate, bladder, lung, colon, brain and large intestine. Increased expression of 9-B1 was seen in prostate tumor, breast tumor, and normal prostate, salivary gland, large intestine and skin, with increased expression of 11-C8 being seen in prostate tumor, and normal prostate and large intestine.

An additional cDNA fragment derived from the PCR-based normal prostate subtraction, described above, was found to be prostate specific by both micro-array technology and RT-PCR. The determined cDNA sequence of this clone (referred to as 9-A11) is provided in SEQ ID NO: 226. Comparison of this sequence with those in the public databases revealed 99% identity to the known gene HOXB13.

Further studies led to the isolation of the clones 8-C6 and 8-H7. The determined cDNA sequences for these clones are provided in SEQ ID NO: 227 and 228, respectively. These sequences were found to show some homology to previously isolated ESTs.

PCR and hybridization-based methodologies were employed to obtain longer cDNA sequences for clone P20 (also referred to as P703P), yielding three additional cDNA fragments that progressively extend the 5' end of the gene. These fragments, referred to as P703PDE5, P703P6.26, and P703PX-23 (SEQ ID NO: 326, 328 and 330, with the predicted corresponding amino acid sequences being provided in SEQ ID NO: 327, 329 and 331, respectively) contain additional 5' sequence. P703PDE5 was recovered by screening of a cDNA library (#141-26) with a portion of P703P as a probe. P703P6.26 was recovered from a mixture of three prostate tumor cDNAs and P703PX_23 was recovered from cDNA library (#438-48). Together, the additional sequences include all of the putative mature serine protease along with part of the putative signal sequence. The putative full-length cDNA sequence for P703P is provided in SEQ ID NO: 524, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 525.

Further studies using a PCR-based subtraction library of a prostate tumor pool subtracted against a pool of normal tissues (referred to as JP: PCR subtraction) resulted in the isolation of thirteen additional clones, seven of which did not share any significant homology to known GenBank sequences. The determined cDNA sequences for these seven clones (P711P, P712P, novel 23, P774P, P775P, P710P and P768P) are provided in SEQ ID NO: 307-311, 313 and 315, respectively. The remaining six clones (SEQ ID NO: 316 and 321-325) were shown to share some homology to known genes. By microarray analysis, all thirteen clones showed three or more fold over-expression in prostate tissues, including prostate tumors, BPH and normal prostate as compared to normal non-prostate tissues. Clones P711P, P712P, novel 23 and P768P showed over-expression in most prostate tumors and BPH tissues tested (n=29), and in the majority of normal prostate tissues (n=4), but background to low expression levels in all normal tissues. Clones P774P, P775P and P710P showed comparatively lower expression and expression in fewer prostate tumors and BPH samples, with negative to low expression in normal prostate.

The full-length cDNA for P711P was obtained by employing the partial sequence of SEQ ID NO: 307 to screen a prostate cDNA library. Specifically, a directionally cloned prostate cDNA library was prepared using standard techniques. One million colonies of this library were plated onto LB/Amp plates. Nylon membrane filters were used to lift these colonies, and the cDNAs which were picked up by these filters were denatured and cross-linked to the filters by UV light. The P711P cDNA fragment of SEQ ID NO: 307 was radio-labeled and used to hybridize with these filters. Positive clones were selected, and cDNAs were prepared and sequenced using an automatic Perkin Elmer/Applied Biosystems sequencer. The determined full-length sequence of P711P is provided in SEQ ID NO: 382, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 383.

Using PCR and hybridization-based methodologies, additional cDNA sequence information was derived for two clones described above, 11-C9 and 9-F3, herein after referred to as P707P and P714P, respectively (SEQ ID NO: 333 and 334). After comparison with the most recent GenBank, P707P was found to be a splice variant of the known gene HoxB13. In contrast, no significant homologies to P714P were found.

Clones 8-B3, P89, P98, P130 and P201 (as disclosed in U.S. Patent Application No. 09/020,956, filed February 9, 1998) were found to be contained within one contiguous sequence, referred to as P705P (SEQ ID NO: 335, with the predicted amino acid sequence provided in SEQ ID NO: 336), which was determined to be a splice variant of the known gene NKX 3.1.

Further studies on P775P resulted in the isolation of four additional sequences (SEQ ID NO: 473-476) which are all splice variants of the P775P gene. The sequence of SEQ ID NO: 474 was found to contain two open reading frames (ORFs). The predicted amino acid sequences encoded by these ORFs are provided in SEQ ID NO: 477 and 478. The cDNA sequence of SEQ ID NO: 475 was found to contain an ORF which encodes the amino acid sequence of SEQ ID NO: 479. The cDNA sequence of SEQ ID NO: 473 was found to contain four ORFs. The predicted amino acid sequences encoded by these ORFs are provided in SEQ ID NO: 480-483.

Subsequent studies led to the identification of a genomic region on chromosome 22q11.2, known as the Cat Eye Syndrome region, that contains the five prostate genes P704P, P712P, P774P, P775P and B305D. The relative location of each of these five genes within the genomic region is shown in Fig. 10. This region may therefore be associated with malignant tumors, and other potential tumor genes may be contained within this region. These studies also led

to the identification of a potential open reading frame (ORF) for P775P (provided in SEQ ID NO: 533), which encodes the amino acid sequence of SEQ ID NO: 534.

EXAMPLE 4

SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems 430A peptide synthesizer using Fmoc chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

EXAMPLE 5

FURTHER ISOLATION AND CHARACTERIZATION OF PROSTATE-SPECIFIC POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA library generated from prostate primary tumor mRNA as described above was subtracted with cDNA from normal prostate. The subtraction was performed using a PCR-based protocol (Clontech), which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the

subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are overexpressed in prostate tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

In addition to genes known to be overexpressed in prostate tumor, seventy-seven further clones were identified. Sequences of these partial cDNAs are provided in SEQ ID NO: 29 to 305. Most of these clones had no significant homology to database sequences. Exceptions were JPTPN23 (SEQ ID NO: 231; similarity to pig valosin-containing protein), JPTPN30 (SEQ ID NO: 234; similarity to rat mRNA for proteasome subunit), JPTPN45 (SEQ ID NO: 243; similarity to rat *norvegicus* cytosolic NADP-dependent isocitrate dehydrogenase), JPTPN46 (SEQ ID NO: 244; similarity to human subclone H8 4 d4 DNA sequence), JP1D6 (SEQ ID NO: 265; similarity to *G. gallus* dynein light chain-A), JP8D6 (SEQ ID NO: 288; similarity to human BAC clone RG016J04), JP8F5 (SEQ ID NO: 289; similarity to human subclone H8 3 b5 DNA sequence), and JP8E9 (SEQ ID NO: 299; similarity to human Alu sequence).

Additional studies using the PCR-based subtraction library consisting of a prostate tumor pool subtracted against a normal prostate pool (referred to as PT-PN PCR subtraction) yielded three additional clones. Comparison of the cDNA sequences of these clones with the most

recent release of GenBank revealed no significant homologies to the two clones referred to as P715P and P767P (SEQ ID NO: 312 and 314). The remaining clone was found to show some homology to the known gene KIAA0056 (SEQ ID NO: 318). Using microarray analysis to measure mRNA expression levels in various tissues, all three clones were found to be over-expressed in prostate tumors and BPH tissues. Specifically, clone P715P was over-expressed in most prostate tumors and BPH tissues by a factor of three or greater, with elevated expression seen in the majority of normal prostate samples and in fetal tissue, but negative to low expression in all other normal tissues. Clone P767P was over-expressed in several prostate tumors and BPH tissues, with moderate expression levels in half of the normal prostate samples, and background to low expression in all other normal tissues tested.

Further analysis, by microarray as described above, of the PT-PN PCR subtraction library and of a DNA subtraction library containing cDNA from prostate tumor subtracted with a pool of normal tissue cDNAs, led to the isolation of 27 additional clones (SEQ ID NO: 340-365 and 381) which were determined to be over-expressed in prostate tumor. The clones of SEQ ID NO: 341, 342, 345, 347, 348, 349, 351, 355-359, 361, 362 and 364 were also found to be expressed in normal prostate. Expression of all 26 clones in a variety of normal tissues was found to be low or undetectable, with the exception of P544S (SEQ ID NO: 356) which was found to be expressed in small intestine. Of the 26 clones, 10 (SEQ ID NO: 340-349) were found to show some homology to previously identified sequences. No significant homologies were found to the clones of SEQ ID NO: 350, 351 and 353-365.

Further studies on the clone of SEQ ID NO: 352 (referred to as P790P) led to the isolation of the full-length cDNA sequence of SEQ ID NO: 526. The corresponding predicted amino acid is provided in SEQ ID NO: 527. Data from two quantitative PCR experiments indicated that P790P is over-expressed in 11/15 tested prostate tumor samples and is expressed at low levels in spinal cord, with no expression being seen in all other normal samples tested. Data from further PCR experiments and microarray experiments showed over-expression in normal prostate and prostate tumor with little or no expression in other tissues tested. P790P was subsequently found to show significant homology to a previously identified G-protein coupled prostate tissue receptor.

EXAMPLE 6

PEPTIDE PRIMING OF MICE AND PROPAGATION OF CTL LINES

5 6.1. This Example illustrates the preparation of a CTL cell line specific for cells expressing the P502S gene.

Mice expressing the transgene for human HLA A2Kb (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with P2S#12 peptide (VLGWVAEL; SEQ ID NO: 306), which is derived from the P502S gene (also referred to herein as J1-17, SEQ ID NO: 8), as described by Theobald et al., *Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995 with the following modifications. Mice were immunized with 100µg of P2S#12 and 120µg of an I-A^b binding peptide derived from hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and using a nylon mesh single cell suspensions prepared. Cells were then resuspended at 6×10^6 cells/ml in complete media (RPMI-1640; Gibco
15 BRL, Gaithersburg, MD) containing 10% FCS, 2mM Glutamine (Gibco BRL), sodium pyruvate (Gibco BRL), non-essential amino acids (Gibco BRL), 2×10^{-5} M 2-mercaptoethanol, 50U/ml penicillin and streptomycin, and cultured in the presence of irradiated (3000 rads) P2S#12-pulsed (5mg/ml P2S#12 and 10mg/ml β2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7µg/ml dextran sulfate and 25µg/ml LPS for 3 days). Six days later, cells (5×10^5 /ml) were restimulated with 2.5×10^6 /ml peptide pulsed irradiated (20,000 rads) EL4A2Kb cells (Sherman et al, *Science* 258:815-818, 1992) and 3×10^6 /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20U/ml IL-2. Cells continued to be restimulated on a weekly basis as described, in preparation for cloning the line.

P2S#12 line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb
25 tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, clones that were growing were isolated and maintained in culture. Several of these clones demonstrated significantly higher reactivity (lysis) against human fibroblasts (HLA A2Kb expressing) transduced with P502S than against control fibroblasts. An example is presented in
30 Figure 1.

This data indicates that P2S #12 represents a naturally processed epitope of the P502S protein that is expressed in the context of the human HLA A2Kb molecule.

6.2. This Example illustrates the preparation of murine CTL lines and CTL clones specific for cells expressing the P501S gene.

This series of experiments were performed similarly to that described above. Mice were immunized with the P1S#10 peptide (SEQ ID NO: 337), which is derived from the P501S gene (also referred to herein as L1-12, SEQ ID NO: 110). The P1S#10 peptide was derived by analysis of the predicted polypeptide sequence for P501S for potential HLA-A2 binding sequences as defined by published HLA-A2 binding motifs (Parker, KC, *et al*, *J. Immunol.*, 152:163, 1994). P1S#10 peptide was synthesized as described in Example 4, and empirically tested for HLA-A2 binding using a T cell based competition assay. Predicted A2 binding peptides were tested for their ability to compete HLA-A2 specific peptide presentation to an HLA-A2 restricted CTL clone (D150M58), which is specific for the HLA-A2 binding influenza matrix peptide fluM58. D150M58 CTL secretes TNF in response to self-presentation of peptide fluM58. In the competition assay, test peptides at 100-200 µg/ml were added to cultures of D150M58 CTL in order to bind HLA-A2 on the CTL. After thirty minutes, CTL cultured with test peptides, or control peptides, were tested for their antigen dose response to the fluM58 peptide in a standard TNF bioassay. As shown in Figure 3, peptide P1S#10 competes HLA-A2 restricted presentation of fluM58, demonstrating that peptide P1S#10 binds HLA-A2.

Mice expressing the transgene for human HLA A2Kb were immunized as described by Theobald *et al.* (*Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995) with the following modifications. Mice were immunized with 62.5µg of P1S #10 and 120µg of an I-A^b binding peptide derived from Hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and single cell suspensions prepared using a nylon mesh. Cells were then resuspended at 6×10^6 cells/ml in complete media (as described above) and cultured in the presence of irradiated (3000 rads) P1S#10-pulsed (2µg/ml P1S#10 and 10mg/ml β2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7µg/ml dextran sulfate and 25µg/ml LPS for 3 days). Six days later cells (5×10^5 /ml) were restimulated with 2.5×10^6 /ml peptide-pulsed irradiated (20,000 rads) EL4A2Kb cells, as described above, and 3×10^6 /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20 U/ml IL-2. Cells were restimulated on a weekly basis in preparation for cloning. After three rounds of *in vitro* stimulations, one line was generated that recognized P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat targets as shown in Figure 4.

A P1S#10-specific CTL line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, viable clones were isolated and maintained in culture. As shown in Figure 5, five of these clones demonstrated specific cytolytic reactivity against P501S-transduced Jurkat A2Kb targets. This data indicates that P1S#10 represents a naturally processed epitope of the P501S protein that is expressed in the context of the human HLA-A2.1 molecule.

EXAMPLE 7

PRIMING OF CTL *IN VIVO* USING NAKED DNA IMMUNIZATION WITH A PROSTATE ANTIGEN

The prostate-specific antigen L1-12, as described above, is also referred to as P501S. HLA A2Kb-Tg mice (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with 100 μ g P501S in the vector VR1012 either intramuscularly or intradermally.

The mice were immunized three times, with a two week interval between immunizations. Two weeks after the last immunization, immune spleen cells were cultured with Jurkat A2Kb-P501S transduced stimulator cells. CTL lines were stimulated weekly. After two weeks of *in vitro* stimulation, CTL activity was assessed against P501S transduced targets. Two out of 8 mice developed strong anti-P501S CTL responses. These results demonstrate that P501S contains at least one naturally processed HLA-A2-restricted CTL epitope.

EXAMPLE 8

ABILITY OF HUMAN T CELLS TO RECOGNIZE PROSTATE-SPECIFIC POLYPEPTIDES

This Example illustrates the ability of T cells specific for a prostate tumor polypeptide to recognize human tumor.

Human CD8⁺ T cells were primed *in vitro* to the P2S-12 peptide (SEQ ID NO: 306) derived from P502S (also referred to as J1-17) using dendritic cells according to the protocol of Van Tsai et al. (*Critical Reviews in Immunology* 18:65-75, 1998). The resulting CD8⁺ T cell microcultures were tested for their ability to recognize the P2S-12 peptide presented by autologous fibroblasts or fibroblasts which were transduced to express the P502S gene in a γ -interferon

ELISPOT assay (see Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). Briefly, titrating numbers of T cells were assayed in duplicate on 10^4 fibroblasts in the presence of 3 $\mu\text{g/ml}$ human β_2 -microglobulin and 1 $\mu\text{g/ml}$ P2S-12 peptide or control E75 peptide. In addition, T cells were simultaneously assayed on autologous fibroblasts transduced with the P502S gene or as a control, fibroblasts transduced with HER-2/*neu*. Prior to the assay, the fibroblasts were treated with 10 ng/ml γ -interferon for 48 hours to upregulate class I MHC expression. One of the microcultures (#5) demonstrated strong recognition of both peptide-pulsed fibroblasts as well as transduced fibroblasts in a γ -interferon ELISPOT assay. Figure 2A demonstrates that there was a strong increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts pulsed with the P2S-12 peptide (solid bars) but not with the control E75 peptide (open bars). This shows the ability of these T cells to specifically recognize the P2S-12 peptide. As shown in Figure 2B, this microculture also demonstrated an increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts transduced to express the P502S gene but not the HER-2/*neu* gene. These results provide additional confirmatory evidence that the P2S-12 peptide is a naturally processed epitope of the P502S protein. Furthermore, this also demonstrates that there exists in the human T cell repertoire, high affinity T cells which are capable of recognizing this epitope. These T cells should also be capable of recognizing human tumors which express the P502S gene.

EXAMPLE 9

ELICITATION OF PROSTATE ANTIGEN-SPECIFIC CTL RESPONSES IN HUMAN BLOOD

This Example illustrates the ability of a prostate-specific antigen to elicit a CTL response in blood of normal humans.

Autologous dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal donors by growth for five days in RPMI medium containing 10% human serum, 50 ng/ml GM-CSF and 30 ng/ml IL-4. Following culture, DC were infected overnight with recombinant P501S-expressing vaccinia virus at an M.O.I. of 5 and matured for 8 hours by the addition of 2 micrograms/ml CD40 ligand. Virus was inactivated by UV irradiation, CD8⁺ cells were isolated by positive selection using magnetic beads, and priming cultures were initiated in 24-well plates. Following five stimulation cycles using autologous fibroblasts retrovirally transduced

to express P501S and CD80, CD8+ lines were identified that specifically produced interferon-gamma when stimulated with autologous P501S-transduced fibroblasts. The P501S-specific activity of cell line 3A-1 could be maintained following additional stimulation cycles on autologous B-LCL transduced with P501S. Line 3A-1 was shown to specifically recognize autologous B-LCL transduced to express P501S, but not EGFP-transduced autologous B-LCL, as measured by cytotoxicity assays (^{51}Cr release) and interferon-gamma production (Interferon-gamma Elispot; *see above and Lalvani et al., J. Exp. Med. 186:859-865, 1997*). The results of these assays are presented in Figures 6A and 6B.

EXAMPLE 10

IDENTIFICATION OF A NATURALLY PROCESSED CTL EPITOPE CONTAINED WITHIN A PROSTATE-SPECIFIC ANTIGEN

The 9-mer peptide p5 (SEQ ID NO: 338) was derived from the P703P antigen (also referred to as P20). The p5 peptide is immunogenic in human HLA-A2 donors and is a naturally processed epitope. Antigen specific human CD8+ T cells can be primed following repeated *in vitro* stimulations with monocytes pulsed with p5 peptide. These CTL specifically recognize p5-pulsed and P703P-transduced target cells in both ELISPOT (as described above) and chromium release assays. Additionally, immunization of HLA-A2Kb transgenic mice with p5 leads to the generation of CTL lines which recognize a variety of HLA-A2Kb or HLA-A2 transduced target cells expressing P703P.

Initial studies demonstrating that p5 is a naturally processed epitope were done using HLA-A2Kb transgenic mice. HLA-A2Kb transgenic mice were immunized subcutaneously in the footpad with 100 μg of p5 peptide together with 140 μg of hepatitis B virus core peptide (a Th peptide) in Freund's incomplete adjuvant. Three weeks post immunization, spleen cells from immunized mice were stimulated *in vitro* with peptide-pulsed LPS blasts. CTL activity was assessed by chromium release assay five days after primary *in vitro* stimulation. Retrovirally transduced cells expressing the control antigen P703P and HLA-A2Kb were used as targets. CTL lines that specifically recognized both p5-pulsed targets as well as P703P-expressing targets were identified.

Human *in vitro* priming experiments demonstrated that the p5 peptide is immunogenic in humans. Dendritic cells (DC) were differentiated from monocyte cultures derived

from PBMC of normal human donors by culturing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, the DC were pulsed with 1 ug/ml p5 peptide and cultured with CD8+ T cell enriched PBMC. CTL lines were restimulated on a weekly basis with p5-pulsed monocytes. Five to six weeks after initiation of the CTL cultures, CTL recognition of p5-pulsed target cells was demonstrated. CTL were additionally shown to recognize human cells transduced to express P703P, demonstrating that p5 is a naturally processed epitope.

EXAMPLE 11

EXPRESSION OF A BREAST TUMOR-DERIVED ANTIGEN IN PROSTATE

Isolation of the antigen B305D from breast tumor by differential display is described in US Patent Application No. 08/700,014, filed August 20, 1996. Several different splice forms of this antigen were isolated. The determined cDNA sequences for these splice forms are provided in SEQ ID NO: 366-375, with the predicted amino acid sequences corresponding to the sequences of SEQ ID NO: 292, 298 and 301-303 being provided in SEQ ID NO: 299-306, respectively. In further studies, a splice variant of the cDNA sequence of SEQ ID NO: 366 was isolated which was found to contain an additional guanine residue at position 884 (SEQ ID NO: 530), leading to a frameshift in the open reading frame. The determined DNA sequence of this ORF is provided in SEQ ID NO: 531. This frameshift generates a protein sequence (provided in SEQ ID NO: 532) of 293 amino acids that contains the C-terminal domain common to the other isoforms of B305D but that differs in the N-terminal region.

The expression levels of B305D in a variety of tumor and normal tissues were examined by real time PCR and by Northern analysis. The results indicated that B305D is highly expressed in breast tumor, prostate tumor, normal prostate and normal testes, with expression being low or undetectable in all other tissues examined (colon tumor, lung tumor, ovary tumor, and normal bone marrow, colon, kidney, liver, lung, ovary, skin, small intestine, stomach).

EXAMPLE 12

GENERATION OF HUMAN CTL *IN VITRO* USING WHOLE GENE PRIMING AND STIMULATION TECHNIQUES WITH PROSTATE-SPECIFIC ANTIGEN

Using *in vitro* whole-gene priming with P501S-vaccinia infected DC (see, for example, Yee et al, *The Journal of Immunology*, 157(9):4079-86, 1996), human CTL lines were derived that specifically recognize autologous fibroblasts transduced with P501S (also known as L1-12), as determined by interferon- γ ELISPOT analysis as described above. Using a panel of HLA-mismatched B-LCL lines transduced with P501S, these CTL lines were shown to be likely restricted to HLAB class I allele. Specifically, dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by growing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, DC were infected overnight with recombinant P501S vaccinia virus at a multiplicity of infection (M.O.I) of five, and matured overnight by the addition of 3 μ g/ml CD40 ligand. Virus was inactivated by UV irradiation. CD8⁺ T cells were isolated using a magnetic bead system, and priming cultures were initiated using standard culture techniques. Cultures were restimulated every 7-10 days using autologous primary fibroblasts retrovirally transduced with P501S and CD80. Following four stimulation cycles, CD8⁺ T cell lines were identified that specifically produced interferon- γ when stimulated with P501S and CD80-transduced autologous fibroblasts. A panel of HLA-mismatched B-LCL lines transduced with P501S were generated to define the restriction allele of the response. By measuring interferon- γ in an ELISPOT assay, the P501S specific response was shown to be likely restricted by HLA B alleles. These results demonstrate that a CD8⁺ CTL response to P501S can be elicited.

To identify the epitope(s) recognized, cDNA encoding P501S was fragmented by various restriction digests, and sub-cloned into the retroviral expression vector pBIB-KS. Retroviral supernatants were generated by transfection of the helper packaging line Phoenix-Ampho. Supernatants were then used to transduce Jurkat/A2Kb cells for CTL screening. CTL were screened in IFN-gamma ELISPOT assays against these A2Kb targets transduced with the "library" of P501S fragments. Initial positive fragments P501S/H3 and P501S/F2 were sequenced and found to encode amino acids 106-553 and amino acids 136-547, respectively, of SEQ ID NO: 113. A truncation of H3 was made to encode amino acid residues 106-351 of SEQ ID NO: 113, which was unable to stimulate the CTL, thus localizing the epitope to amino acid residues 351-547. Additional fragments encoding amino acids 1-472 (Fragment A) and amino acids 1-351 (Fragment B) were also constructed. Fragment A but not Fragment B stimulated the CTL thus localizing the epitope to amino acid residues 351-472. Overlapping 20-mer and 18-mer peptides representing this region were tested by pulsing Jurkat/A2Kb cells versus CTL in an IFN-gamma assay. Only peptides

P501S-369(20) and P501S-369(18) stimulated the CTL. Nine-mer and 10-mer peptides representing this region were synthesized and similarly tested. Peptide P501S-370 (SEQ ID NO: 539) was the minimal 9-mer giving a strong response. Peptide P501S-376 (SEQ ID NO: 540) also gave a weak response, suggesting that it might represent a cross-reactive epitope.

5 In subsequent studies, the ability of primary human B cells transduced with P501S to prime MHC class I-restricted, P501S-specific, autologous CD8 T cells was examined. Primary B cells were derived from PBMC of a homozygous HLA-A2 donor by culture in CD40 ligand and IL-4, transduced at high frequency with recombinant P501S in the vector pBIB, and selected with blastocidin-S. For *in vitro* priming, purified CD8+ T cells were cultured with autologous CD40
10 ligand + IL-4 derived, P501S-transduced B cells in a 96-well microculture format. These CTL microcultures were re-stimulated with P501S-transduced B cells and then assayed for specificity. Following this initial screen, microcultures with significant signal above background were cloned on autologous EBV-transformed B cells (BLCL), also transduced with P501S. Using IFN-gamma ELISPOT for detection, several of these CD8 T cell clones were found to be specific for P501S, as
15 demonstrated by reactivity to BLCL/P501S but not BLCL transduced with control antigen. It was further demonstrated that the anti-P501S CD8 T cell specificity is HLA-A2-restricted. First, antibody blocking experiments with anti-HLA-A,B,C monoclonal antibody (W6.32), anti-HLA-B,C monoclonal antibody (B1.23.2) and a control monoclonal antibody showed that only the anti-HLA-A,B,C antibody blocked recognition of P501S-expressing autologous BLCL. Secondly, the anti-
20 P501S CTL also recognized an HLA-A2 matched, heterologous BLCL transduced with P501S, but not the corresponding EGFP transduced control BLCL.

EXAMPLE 13

IDENTIFICATION OF PROSTATE-SPECIFIC ANTIGENS BY MICROARRAY ANALYSIS

25 This Example describes the isolation of certain prostate-specific polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in
30 prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 372 clones were identified, and 319 were successfully sequenced. Table I presents a summary of these clones, which are shown in SEQ ID NOs:385-400. Of these sequences

SEQ ID NOs:386, 389, 390 and 392 correspond to novel genes, and SEQ ID NOs: 393 and 396 correspond to previously identified sequences. The others (SEQ ID NOs:385, 387, 388, 391, 394, 395 and 397-400) correspond to known sequences, as shown in Table I.

5

Table I
Summary of Prostate Tumor Antigens

Known Genes	Previously Identified Genes	Novel Genes
T-cell gamma chain	P504S	23379 (SEQ ID NO:389)
Kallikrein	P1000C	23399 (SEQ ID NO:392)
Vector	P501S	23320 (SEQ ID NO:386)
CGI-82 protein mRNA (23319; SEQ ID NO:385)	P503S	23381 (SEQ ID NO:390)
PSA	P510S	
Ald. 6 Dehyd.	P784P	
L-idoitol-2 dehydrogenase (23376; SEQ ID NO:388)	P502S	
Ets transcription factor PDEF (22672; SEQ ID NO:398)	P706P	
hTGR (22678; SEQ ID NO:399)	19142.2, bangur.seq (22621; SEQ ID NO:396)	
KIAA0295(22685; SEQ ID NO:400)	5566.1 Wang (23404; SEQ ID NO:393)	
Prostatic Acid Phosphatase(22655; SEQ ID NO:397)	P712P	
transglutaminase (22611; SEQ ID NO:395)	P778P	
HDLBP (23508; SEQ ID NO:394)		
CGI-69 Protein(23367; SEQ ID NO:387)		
KIAA0122(23383; SEQ ID NO:391)		
TEEG		

CGI-82 showed 4.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 43% of prostate tumors, 25% normal prostate, not detected in other normal tissues tested. L-iditol-2 dehydrogenase showed 4.94 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 90% of prostate tumors, 100% of normal prostate, and not detected in other normal tissues tested. Ets transcription factor PDEF showed 5.55 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% prostate tumors, 25% normal prostate and not detected in other normal tissues tested. hTGR1 showed 9.11 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 63% of prostate tumors and is not detected in normal tissues tested including normal prostate. KIAA0295 showed 5.59 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% of prostate tumors, low to undetectable in normal tissues tested including normal prostate tissues. Prostatic acid phosphatase showed 9.14 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 67% of prostate tumors, 50% of normal prostate, and not detected in other normal tissues tested. Transglutaminase showed 14.84 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 30% of prostate tumors, 50% of normal prostate, and is not detected in other normal tissues tested. High density lipoprotein binding protein (HDLBP) showed 28.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% of normal prostate, and is undetectable in all other normal tissues tested. CGI-69 showed 3.56 fold over-expression in prostate tissues as compared to other normal tissues tested. It is a low abundant gene, detected in more than 90% of prostate tumors, and in 75% normal prostate tissues. The expression of this gene in normal tissues was very low. KIAA0122 showed 4.24 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 57% of prostate tumors, it was undetectable in all normal tissues tested including normal prostate tissues. 19142.2 bangur showed 23.25 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors and 100% of normal prostate. It was undetectable in other normal tissues tested. 5566.1 Wang showed 3.31 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% normal prostate and was also over-expressed in normal bone marrow, pancreas, and activated PBMC. Novel clone 23379 showed 4.86 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in 97%

of prostate tumors and 75% normal prostate and is undetectable in all other normal tissues tested. Novel clone 23399 showed 4.09 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 27% of prostate tumors and was undetectable in all normal tissues tested including normal prostate tissues. Novel clone 23320 showed 3.15 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in all prostate tumors and 50% of normal prostate tissues. It was also expressed in normal colon and trachea. Other normal tissues do not express this gene at high level.

EXAMPLE 14

IDENTIFICATION OF PROSTATE-SPECIFIC ANTIGENS BY ELECTRONIC SUBTRACTION

This Example describes the use of an electronic subtraction technique to identify

prostate-specific antigens.

Potential prostate-specific genes present in the GenBank human EST database were identified by electronic subtraction (similar to that described by Vasmatizis et al., *Proc. Natl. Acad. Sci. USA* 95:300-304, 1998). The sequences of EST clones (43,482) derived from various prostate libraries were obtained from the GenBank public human EST database. Each prostate EST sequence was used as a query sequence in a BLASTN (National Center for Biotechnology Information) search against the human EST database. All matches considered identical (length of matching sequence >100 base pairs, density of identical matches over this region > 70%) were grouped (aligned) together in a cluster. Clusters containing more than 200 ESTs were discarded since they probably represented repetitive elements or highly expressed genes such as those for ribosomal proteins. If two or more clusters shared common ESTs, those clusters were grouped together into a "supercluster," resulting in 4,345 prostate superclusters.

Records for the 479 human cDNA libraries represented in the GenBank release were downloaded to create a database of these cDNA library records. These 479 cDNA libraries were grouped into three groups: Plus (normal prostate and prostate tumor libraries, and breast cell line libraries, in which expression was desired), Minus (libraries from other normal adult tissues, in which expression was not desirable), and Other (libraries from fetal tissue, infant tissue, tissues found only in women, non-prostate tumors and cell lines other than prostate cell lines, in which

expression was considered to be irrelevant). A summary of these library groups is presented in Table II.

Table II

Prostate cDNA Libraries and ESTs

Library	# of Libraries	# of ESTs
Plus	25	43,482
Normal	11	18,875
Tumor	11	21,769
Cell lines	3	2,838
Minus	166	
Other	287	

Each supercluster was analyzed in terms of the ESTs within the supercluster. The tissue source of each EST clone was noted and used to classify the superclusters into four groups:

- 10 Type 1- EST clones found in the Plus group libraries only; no expression detected in Minus or Other group libraries; Type 2- EST clones derived from the Plus and Other group libraries only; no expression detected in the Minus group; Type 3- EST clones derived from the Plus, Minus and Other group libraries, but the number of ESTs derived from the Plus group is higher than in either the Minus or Other groups; and Type 4- EST clones derived from Plus, Minus and Other group
- 15 libraries, but the number derived from the Plus group is higher than the number derived from the Minus group. This analysis identified 4,345 breast clusters (*see* Table III). From these clusters, 3,172 EST clones were ordered from Research Genetics, Inc., and were received as frozen glycerol stocks in 96-well plates.

Table III
Prostate Cluster Summary

Type	# of Superclusters	# of ESTs Ordered
1	688	677
2	2899	2484
3	85	11
4	673	0
Total	4345	3172

The EST clone inserts were PCR-amplified using amino-linked PCR primers for Synteni microarray analysis. When more than one PCR product was obtained for a particular clone, that PCR product was not used for expression analysis. In total, 2,528 clones from the electronic subtraction method were analyzed by microarray analysis to identify electronic subtraction breast clones that had high levels of tumor vs. normal tissue mRNA. Such screens were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Within these analyses, the clones were arrayed on the chip, which was then probed with fluorescent probes generated from normal and tumor prostate cDNA, as well as various other normal tissues. The slides were scanned and the fluorescence intensity was measured.

Clones with an expression ratio greater than 3 (*i.e.*, the level in prostate tumor and normal prostate mRNA was at least three times the level in other normal tissue mRNA) were identified as prostate tumor-specific sequences (Table IV). The sequences of these clones are provided in SEQ ID NO: 401-453, with certain novel sequences shown in SEQ ID NO: 407, 413, 416-419, 422, 426, 427 and 450.

Table IV
Prostate-tumor Specific Clones

SEQ ID NO.	Sequence Designation	Comments
401	22545	previously identified P1000C
402	22547	previously identified P704P
403	22548	known
404	22550	known
405	22551	PSA
406	22552	prostate secretory protein 94
407	22553	novel
408	22558	previously identified P509S
409	22562	glandular kallikrein
410	22565	previously identified P1000C
411	22567	PAP
412	22568	B1006C (breast tumor antigen)
413	22570	novel
414	22571	PSA
415	22572	previously identified P706P
416	22573	novel
417	22574	novel
418	22575	novel
419	22580	novel
420	22581	PAP
421	22582	prostatic secretory protein 94
422	22583	novel
423	22584	prostatic secretory protein 94
424	22585	prostatic secretory protein 94
425	22586	known
426	22587	novel
427	22588	novel
428	22589	PAP
429	22590	known
430	22591	PSA
431	22592	known
432	22593	Previously identified P777P
433	22594	T cell receptor gamma chain
434	22595	Previously identified P705P
435	22596	Previously identified P707P
436	22847	PAP
437	22848	known
438	22849	prostatic secretory protein 57
439	22851	PAP

440	22852	PAP
441	22853	PAP
442	22854	previously identified P509S
443	22855	previously identified P705P
444	22856	previously identified P774P
445	22857	PSA
446	23601	previously identified P777P
447	23602	PSA
448	23605	PSA
449	23606	PSA
450	23612	novel
451	23614	PSA
452	23618	previously identified P1000C
453	23622	previously identified P705P

EXAMPLE 15

FURTHER IDENTIFICATION OF PROSTATE-SPECIFIC ANTIGENS BY MICROARRAY

ANALYSIS

This Example describes the isolation of additional prostate-specific polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 142 clones were identified and sequenced. Certain of these clones are shown in SEQ ID NO: 454-467. Of these sequences, SEQ ID NO: 459-461 represent novel genes. The others (SEQ ID NO: 454-458 and 461-467) correspond to known sequences.

EXAMPLE 16

FURTHER CHARACTERIZATION OF PROSTATE-SPECIFIC ANTIGEN P710P

This Example describes the full length cloning of P710P.

The prostate cDNA library described above was screened with the P710P fragment described above. One million colonies were plated on LB/Ampicillin plates. Nylon membrane

filters were used to lift these colonies, and the cDNAs picked up by these filters were then denatured and cross-linked to the filters by UV light. The P710P fragment was radiolabeled and used to hybridize with the filters. Positive cDNA clones were selected and their cDNAs recovered and sequenced by an automatic Perkin Elmer/Applied Biosystems Division Sequencer. Four sequences were obtained, and are presented in SEQ ID NO: 468-471. These sequences appear to represent different splice variants of the P710P gene.

EXAMPLE 17

PROTEIN EXPRESSION OF THE PROSTATE-SPECIFIC ANTIGEN P501S

This example describes the expression and purification of the prostate-specific antigen P501S in *E. coli*, baculovirus and mammalian cells.

a) Expression in *E. coli*

Expression of the full-length form of P501S was attempted by first cloning P501S without the leader sequence (amino acids 36-553 of SEQ ID NO: 113) downstream of the first 30 amino acids of the *M. tuberculosis* antigen Ra12 (SEQ ID NO: 484) in pET17b. Specifically, P501S DNA was used to perform PCR using the primers AW025 (SEQ ID NO: 485) and AW003 (SEQ ID NO: 486). AW025 is a sense cloning primer that contains a HindIII site. AW003 is an antisense cloning primer that contains an EcoRI site. DNA amplification was performed using 5 µl 10X Pfu buffer, 1 µl 20 mM dNTPs, 1 µl each of the PCR primers at 10 µM concentration, 40 µl water, 1 µl Pfu DNA polymerase (Stratagene, La Jolla, CA) and 1 µl DNA at 100 ng/µl. Denaturation at 95°C was performed for 30 sec, followed by 10 cycles of 95°C for 30 sec, 60°C for 1 min and by 72°C for 3 min. 20 cycles of 95°C for 30 sec, 65°C for 1 min and by 72°C for 3 min, and lastly by 1 cycle of 72°C for 10 min. The PCR product was cloned to Ra12m/pET17b using HindIII and EcoRI. The sequence of the resulting fusion construct (referred to as Ra12-P501S-F) was confirmed by DNA sequencing.

The fusion construct was transformed into BL21(DE3)pLysE, pLysS and CodonPlus *E. coli* (Stratagene) and grown overnight in LB broth with kanamycin. The resulting culture was induced with IPTG. Protein was transferred to PVDF membrane and blocked with 5% non-fat milk (in PBS-Tween buffer), washed three times and incubated with mouse anti-His tag antibody (Clontech) for 1 hour. The membrane was washed 3 times and probed with HRP-Protein A

(Zymed) for 30 min. Finally, the membrane was washed 3 times and developed with ECL (Amersham). No expression was detected by Western blot. Similarly, no expression was detected by Western blot when the Ra12-P501S-F fusion was used for expression in BL21CodonPlus by CE6 phage (Invitrogen).

5 An N-terminal fragment of P501S (amino acids 36-325 of SEQ ID NO: 113) was cloned down-stream of the first 30 amino acids of the *M. tuberculosis* antigen Ra12 in pET17b as follows. P501S DNA was used to perform PCR using the primers AW025 (SEQ ID NO: 485) and AW027 (SEQ ID NO: 487). AW027 is an antisense cloning primer that contains an EcoRI site and a stop codon. DNA amplification was performed essentially as described above. The resulting PCR
10 product was cloned to Ra12 in pET17b at the HindIII and EcoRI sites. The fusion construct (referred to as Ra12-P501S-N) was confirmed by DNA sequencing.

The Ra12-P501S-N fusion construct was used for expression in BL21(DE3)pLysE, pLysS and CodonPlus, essentially as described above. Using Western blot analysis, protein bands were observed at the expected molecular weight of 36 kDa. Some high molecular weight bands
15 were also observed, probably due to aggregation of the recombinant protein. No expression was detected by Western blot when the Ra12-P501S-F fusion was used for expression in BL21CodonPlus by CE6 phage.

A fusion construct comprising a C-terminal portion of P501S (amino acids 257-553 of SEQ ID NO: 113) located down-stream of the first 30 amino acids of the *M. tuberculosis* antigen
20 Ra12 (SEQ ID NO: 484) was prepared as follows. P501S DNA was used to perform PCR using the primers AW026 (SEQ ID NO: 488) and AW003 (SEQ ID NO: 486). AW026 is a sense cloning primer that contains a HindIII site. DNA amplification was performed essentially as described above. The resulting PCR product was cloned to Ra12 in pET17b at the HindIII and EcoRI sites. The sequence for the fusion construct (referred to as Ra12-P501S-C) was confirmed.

25 The Ra12-P501S-C fusion construct was used for expression in BL21(DE3)pLysE, pLysS and CodonPlus, as described above. A small amount of protein was detected by Western blot, with some molecular weight aggregates also being observed. Expression was also detected by Western blot when the Ra12-P501S-C fusion was used for expression in BL21CodonPlus induced by CE6 phage.

b) Expression of P501S in Baculovirus

The Bac-to-Bac baculovirus expression system (BRL Life Technologies, Inc.) was used to express P501S protein in insect cells. Full-length P501S (SEQ ID NO: 113) was amplified by PCR and cloned into the XbaI site of the donor plasmid pFastBacI. The recombinant bacmid and baculovirus were prepared according to the manufacturer's instructions. The recombinant baculovirus was amplified in Sf9 cells and the high titer viral stocks were utilized to infect High Five cells (Invitrogen) to make the recombinant protein. The identity of the full-length protein was confirmed by N-terminal sequencing of the recombinant protein and by Western blot analysis (Figure 7). Specifically, 0.6 million High Five cells in 6-well plates were infected with either the unrelated control virus BV/ECD_PD (lane 2), with recombinant baculovirus for P501S at different amounts or MOIs (lanes 4-8), or were uninfected (lane 3). Cell lysates were run on SDS-PAGE under reducing conditions and analyzed by Western blot with the anti-P501S monoclonal antibody P501S-10E3-G4D3 (prepared as described below). Lane 1 is the biotinylated protein molecular weight marker (BioLabs).

The localization of recombinant P501S in the insect cells was investigated as follows. The insect cells overexpressing P501S were fractionated into fractions of nucleus, mitochondria, membrane and cytosol. Equal amounts of protein from each fraction were analyzed by Western blot with a monoclonal antibody against P501S. Due to the scheme of fractionation, both nucleus and mitochondria fractions contain some plasma membrane components. However, the membrane fraction is basically free from mitochondria and nucleus. P501S was found to be present in all fractions that contain the membrane component, suggesting that P501S may be associated with plasma membrane of the insect cells expressing the recombinant protein.

c) Expression of P501S in mammalian cells

Full-length P501S (553AA) was cloned into various mammalian expression vectors, including pCEP4 (Invitrogen), pVR1012 (Vical, San Diego, CA) and a modified form of the retroviral vector pBMN, referred to as pBIB. Transfection of P501S/pCEP4 and P501S/pVR1012 into HEK293 fibroblasts was carried out using the Fugene transfection reagent (Boehringer Mannheim). Briefly, 2 ul of Fugene reagent was diluted into 100 ul of serum-free media and incubated at room temperature for 5-10 min. This mixture was added to 1 ug of P501S plasmid DNA, mixed briefly and incubated for 30 minutes at room temperature. The Fugene/DNA mixture

was added to cells and incubated for 24-48 hours. Expression of recombinant P501S in transfected HEK293 fibroblasts was detected by means of Western blot employing a monoclonal antibody to P501S.

Transfection of p501S/pCEP4 into CHO-K cells (American Type Culture Collection, Rockville, MD) was carried out using GenePorter transfection reagent (Gene Therapy Systems, San Diego, CA). Briefly, 15 μ l of GenePorter was diluted in 500 μ l of serum-free media and incubated at room temperature for 10 min. The GenePorter/media mixture was added to 2 μ g of plasmid DNA that was diluted in 500 μ l of serum-free media, mixed briefly and incubated for 30 min at room temperature. CHO-K cells were rinsed in PBS to remove serum proteins, and the GenePorter/DNA mix was added and incubated for 5 hours. The transfected cells were then fed an equal volume of 2x media and incubated for 24-48 hours.

FACS analysis of P501S transiently infected CHO-K cells, demonstrated surface expression of P501S. Expression was detected using rabbit polyclonal antisera raised against a P501S peptide, as described below. Flow cytometric analysis was performed using a FaCScan (Becton Dickinson), and the data were analyzed using the Cell Quest program.

EXAMPLE 18

PREPARATION AND CHARACTERIZATION OF ANTIBODIES AGAINST PROSTATE-SPECIFIC POLYPEPTIDES

20 a) Preparation and Characterization of Antibodies against P501S

A murine monoclonal antibody directed against the carboxy-terminus of the prostate-specific antigen P501S was prepared as follows.

A truncated fragment of P501S (amino acids 355-526 of SEQ ID NO: 113) was generated and cloned into the pET28b vector (Novagen) and expressed in *E. coli* as a thioredoxin fusion protein with a histidine tag. The trx-P501S fusion protein was purified by nickel chromatography, digested with thrombin to remove the trx fragment and further purified by an acid precipitation procedure followed by reverse phase HPLC.

Mice were immunized with truncated P501S protein. Serum bleeds from mice that potentially contained anti-P501S polyclonal sera were tested for P501S-specific reactivity using ELISA assays with purified P501S and trx-P501S proteins. Serum bleeds that appeared to react specifically with P501S were then screened for P501S reactivity by Western analysis. Mice that contained a P501S-specific antibody component were sacrificed and spleen cells were used to

generate anti-P501S antibody producing hybridomas using standard techniques. Hybridoma supernatants were tested for P501S-specific reactivity initially by ELISA, and subsequently by FACS analysis of reactivity with P501S transduced cells. Based on these results, a monoclonal hybridoma referred to as 10E3 was chosen for further subcloning. A number of subclones were generated, tested for specific reactivity to P501S using ELISA and typed for IgG isotype. The results of this analysis are shown below in Table V. Of the 16 subclones tested, the monoclonal antibody 10E3-G4-D3 was selected for further study.

Table V

Isotype analysis of murine anti-P501S monoclonal antibodies

Hybridoma clone	Isotype	Estimated [Ig] in supernatant ($\mu\text{g/ml}$)
4D11	IgG1	14.6
1G1	IgG1	0.6
4F6	IgG1	72
4H5	IgG1	13.8
4H5-E12	IgG1	10.7
4H5-EH2	IgG1	9.2
4H5-H2-A10	IgG1	10
4H5-H2-A3	IgG1	12.8
4H5-H2-A10-G6	IgG1	13.6
4H5-H2-B11	IgG1	12.3
10E3	IgG2a	3.4
10E3-D4	IgG2a	3.8
10E3-D4-G3	IgG2a	9.5
10E3-D4-G6	IgG2a	10.4
10E3-E7	IgG2a	6.5
8H12	IgG2a	0.6

The specificity of 10E3-G4-D3 for P501S was examined by FACS analysis.

Specifically, cells were fixed (2% formaldehyde, 10 minutes), permeabilized (0.1% saponin, 10 minutes) and stained with 10E3-G4-D3 at 0.5 – 1 $\mu\text{g/ml}$, followed by incubation with a secondary, FITC-conjugated goat anti-mouse Ig antibody (Pharmingen, San Diego, CA). Cells were then analyzed for FITC fluorescence using an Excalibur fluorescence activated cell sorter. For FACS analysis of transduced cells, B-LCL were retrovirally transduced with P501S. For analysis of infected cells, B-LCL were infected with a vaccinia vector that expresses P501S. To demonstrate

specificity in these assays, B-LCL transduced with a different antigen (P703P) and uninfected B-LCL vectors were utilized. 10E3-G4-D3 was shown to bind with P501S-transduced B-LCL and also with P501S-infected B-LCL, but not with either uninfected cells or P703P-transduced cells.

To determine whether the epitope recognized by 10E3-G4-D3 was found on the surface or in an intracellular compartment of cells, B-LCL were transduced with P501S or HLA-B8 as a control antigen and either fixed and permeabilized as described above or directly stained with 10E3-G4-D3 and analyzed as above. Specific recognition of P501S by 10E3-G4-D3 was found to require permeabilization, suggesting that the epitope recognized by this antibody is intracellular.

The reactivity of 10E3-G4-D3 with the three prostate tumor cell lines Lncap, PC-3 and DU-145, which are known to express high, medium and very low levels of P501S, respectively, was examined by permeabilizing the cells and treating them as described above. Higher reactivity of 10E3-G4-D3 was seen with Lncap than with PC-3, which in turn showed higher reactivity than DU-145. These results are in agreement with the real time PCR and demonstrate that the antibody specifically recognizes P501S in these tumor cell lines and that the epitope recognized in prostate tumor cell lines is also intracellular.

Specificity of 10E3-G4-D3 for P501S was also demonstrated by Western blot analysis. Lysates from the prostate tumor cell lines Lncap, DU-145 and PC-3, from P501S-transiently transfected HEK293 cells, and from non-transfected HEK293 cells were generated. Western blot analysis of these lysates with 10E3-G4-D3 revealed a 46 kDa immunoreactive band in Lncap, PC-3 and P501S-transfected HEK cells, but not in DU-145 cells or non-transfected HEK293 cells. P501S mRNA expression is consistent with these results since semi-quantitative PCR analysis revealed that P501S mRNA is expressed in Lncap, to a lesser but detectable level in PC-3 and not at all in DU-145 cells. Bacterially expressed and purified recombinant P501S (referred to as P501SStr2) was recognized by 10E3-G4-D3 (24 kDa), as was full-length P501S that was transiently expressed in HEK293 cells using either the expression vector VR1012 or pCEP4. Although the predicted molecular weight of P501S is 60.5 kDa, both transfected and "native" P501S run at a slightly lower mobility due to its hydrophobic nature.

Immunohistochemical analysis was performed on prostate tumor and a panel of normal tissue sections (prostate, adrenal, breast, cervix, colon, duodenum, gall bladder, ileum, kidney, ovary, pancreas, parotid gland, skeletal muscle, spleen and testis). Tissue samples were fixed in formalin solution for 24 hours and embedded in paraffin before being sliced into 10 micron sections. Tissue sections were permeabilized and incubated with 10E3-G4-D3 antibody for 1 hr.

HRP-labeled anti-mouse followed by incubation with DAB chromogen was used to visualize P501S immunoreactivity. P501S was found to be highly expressed in both normal prostate and prostate tumor tissue but was not detected in any of the other tissues tested.

To identify the epitope recognized by 10E3-G4-D3, an epitope mapping approach was pursued. A series of 13 overlapping 20-21 mers (5 amino acid overlap; SEQ ID NO: 489-501) was synthesized that spanned the fragment of P501S used to generate 10E3-G4-D3. Flat bottom 96 well microtiter plates were coated with either the peptides or the P501S fragment used to immunize mice, at 1 microgram/ml for 2 hours at 37 °C. Wells were then aspirated and blocked with phosphate buffered saline containing 1% (w/v) BSA for 2 hours at room temperature, and subsequently washed in PBS containing 0.1% Tween 20 (PBST). Purified antibody 10E3-G4-D3 was added at 2 fold dilutions (1000 ng – 16 ng) in PBST and incubated for 30 minutes at room temperature. This was followed by washing 6 times with PBST and subsequently incubating with HRP-conjugated donkey anti-mouse IgG (H+L)Affinipure F(ab') fragment (Jackson ImmunoResearch, West Grove, PA) at 1:20000 for 30 minutes. Plates were then washed and incubated for 15 minutes in tetramethyl benzidine. Reactions were stopped by the addition of 1N sulfuric acid and plates were read at 450 nm using an ELISA plate reader. As shown in Fig. 8, reactivity was seen with the peptide of SEQ ID NO: 496 (corresponding to amino acids 439-459 of P501S) and with the P501S fragment but not with the remaining peptides, demonstrating that the epitope recognized by 10E3-G4-D3 is localized to amino acids 439-459 of SEQ ID NO: 113.

In order to further evaluate the tissue specificity of P501S, multi-array immunohistochemical analysis was performed on approximately 4700 different human tissues encompassing all the major normal organs as well as neoplasias derived from these tissues. Sixty-five of these human tissue samples were of prostate origin. Tissue sections 0.6 mm in diameter were formalin-fixed and paraffin embedded. Samples were pretreated with HIER using 10 mM citrate buffer pH 6.0 and boiling for 10 min. Sections were stained with 10E3-G4-D3 and P501S immunoreactivity was visualized with HRP. All the 65 prostate tissues samples (5 normal, 55 untreated prostate tumors, 5 hormone refractory prostate tumors) were positive, showing distinct perinuclear staining. All other tissues examined were negative for P501S expression.

b) Preparation and Characterization of Antibodies against P503S

A fragment of P503S (amino acids 113-241 of SEQ ID NO: 114) was expressed and purified from bacteria essentially as described above for P501S and used to immunize both rabbits

and mice. Mouse monoclonal antibodies were isolated using standard hybridoma technology as described above. Rabbit monoclonal antibodies were isolated using Selected Lymphocyte Antibody Method (SLAM) technology at Immgenics Pharmaceuticals (Vancouver, BC, Canada). Table VI, below, lists the monoclonal antibodies that were developed against P503S.

Table VI

Antibody	Species
20D4	Rabbit
JA1	Rabbit
1A4	Mouse
1C3	Mouse
1C9	Mouse
1D12	Mouse
2A11	Mouse
2H9	Mouse
4H7	Mouse
8A8	Mouse
8D10	Mouse
9C12	Mouse
6D12	Mouse

The DNA sequences encoding the complementarity determining regions (CDRs) for the rabbit monoclonal antibodies 20D4 and JA1 were determined and are provided in SEQ ID NO: 502 and 503, respectively.

In order to better define the epitope binding region of each of the antibodies, a series of overlapping peptides were generated that span amino acids 109-213 of SEQ ID NO: 114. These peptides were used to epitope map the anti-P503S monoclonal antibodies by ELISA as follows.

The recombinant fragment of P503S that was employed as the immunogen was used as a positive control. Ninety-six well microtiter plates were coated with either peptide or recombinant antigen at 20 ng/well overnight at 4 °C. Plates were aspirated and blocked with phosphate buffered saline containing 1% (w/v) BSA for 2 hours at room temperature then washed in PBS containing 0.1% Tween 20 (PBST). Purified rabbit monoclonal antibodies diluted in PBST were added to the wells and incubated for 30 min at room temperature. This was followed by washing 6 times with PBST and incubation with Protein-A HRP conjugate at a 1:2000 dilution for a further 30 min. Plates were washed six times in PBST and incubated with tetramethylbenzidine (TMB) substrate for a further

15 min. The reaction was stopped by the addition of 1N sulfuric acid and plates were read at 450 nm using an ELISA plate reader. ELISA with the mouse monoclonal antibodies was performed with supernatants from tissue culture run neat in the assay.

All of the antibodies bound to the recombinant P503S fragment, with the exception of the negative control SP2 supernatant. 20D4, JA1 and 1D12 bound strictly to peptide #2101 (SEQ ID NO: 504), which corresponds to amino acids 151-169 of SEQ ID NO: 114. 1C3 bound to peptide #2102 (SEQ ID NO: 505), which corresponds to amino acids 165-184 of SEQ ID NO: 114. 9C12 bound to peptide #2099 (SEQ ID NO: 522), which corresponds to amino acids 120-139 of SEQ ID NO: 114. The other antibodies bind to regions that were not examined in these studies.

Subsequent to epitope mapping, the antibodies were tested by FACS analysis on a cell line that stably expressed P503S to confirm that the antibodies bind to cell surface epitopes. Cells stably transfected with a control plasmid were employed as a negative control. Cells were stained live with no fixative. 0.5 ug of anti-P503S monoclonal antibody was added and cells were incubated on ice for 30 min before being washed twice and incubated with a FITC-labelled goat anti-rabbit or mouse secondary antibody for 20 min. After being washed twice, cells were analyzed with an Excalibur fluorescent activated cell sorter. The monoclonal antibodies 1C3, 1D12, 9C12, 20D4 and JA1, but not 8D3, were found to bind to a cell surface epitope of P503S.

In order to determine which tissues express P503S, immunohistochemical analysis was performed, essentially as described above, on a panel of normal tissues (prostate, adrenal, breast, cervix, colon, duodenum, gall bladder, ileum, kidney, ovary, pancreas, parotid gland, skeletal muscle, spleen and testis). HRP-labeled anti-mouse or anti-rabbit antibody followed by incubation with TMB was used to visualize P503S immunoreactivity. P503S was found to be highly expressed in prostate tissue, with lower levels of expression being observed in cervix, colon, ileum and kidney, and no expression being observed in adrenal, breast, duodenum, gall bladder, ovary, pancreas, parotid gland, skeletal muscle, spleen and testis.

Western blot analysis was used to characterize anti-P503S monoclonal antibody specificity. SDS-PAGE was performed on recombinant (rec) P503S expressed in and purified from bacteria and on lysates from HEK293 cells transfected with full length P503S. Protein was transferred to nitrocellulose and then Western blotted with each of the anti-P503S monoclonal antibodies (20D4, JA1, 1D12, 6D12 and 9C12) at an antibody concentration of 1 ug/ml. Protein was detected using horse radish peroxidase (HRP) conjugated to either a goat anti-mouse monoclonal antibody or to protein A-sepharose. The monoclonal antibody 20D4 detected the

appropriate molecular weight 14 kDa recombinant P503S (amino acids 113-241) and the 23.5 kDa species in the HEK293 cell lysates transfected with full length P503S. Other anti-P503S monoclonal antibodies displayed similar specificity by Western blot.

5 **c) Preparation and Characterization of Antibodies against P703P**

Rabbits were immunized with either a truncated (P703Ptrl; SEQ ID NO: 172) or full-length mature form (P703Pfl; SEQ ID NO: 523) of recombinant P703P protein was expressed in and purified from bacteria as described above. Affinity purified polyclonal antibody was generated using immunogen P703Pfl or P703Ptrl attached to a solid support. Rabbit monoclonal
10 antibodies were isolated using SLAM technology at Immgenics Pharmaceuticals. Table VII below lists both the polyclonal and monoclonal antibodies that were generated against P703P.

Table VII

Antibody	Immunogen	Species/type
Aff. Purif. P703P (truncated); #2594	P703Ptrl	Rabbit polyclonal
Aff. Purif. P703P (full length); #9245	P703Pfl	Rabbit polyclonal
2D4	P703Ptrl	Rabbit monoclonal
8H2	P703Ptrl	Rabbit monoclonal
7H8	P703Ptrl	Rabbit monoclonal

15

The DNA sequences encoding the complementarity determining regions (CDRs) for the rabbit monoclonal antibodies 8H2, 7H8 and 2D4 were determined and are provided in SEQ ID NO: 506-508, respectively.

Epitope mapping studies were performed as described above. Monoclonal
20 antibodies 2D4 and 7H8 were found to specifically bind to the peptides of SEQ ID NO: 509 (corresponding to amino acids 145-159 of SEQ ID NO: 172) and SEQ ID NO: 510 (corresponding to amino acids 11-25 of SEQ ID NO: 172), respectively. The polyclonal antibody 2594 was found to bind to the peptides of SEQ ID NO: 511-514, with the polyclonal antibody 9427 binding to the peptides of SEQ ID NO: 515-517.

25

The specificity of the anti-P703P antibodies was determined by Western blot analysis as follows. SDS-PAGE was performed on (1) bacterially expressed recombinant antigen; (2) lysates of HEK293 cells and Ltk^{-/-} cells either untransfected or transfected with a plasmid

expressing full length P703P; and (3) supernatant isolated from these cell cultures. Protein was transferred to nitrocellulose and then Western blotted using the anti-P703P polyclonal antibody #2594 at an antibody concentration of 1 ug/ml. Protein was detected using horse radish peroxidase (HRP) conjugated to an anti-rabbit antibody. A 35 kDa immunoreactive band could be observed with recombinant P703P. Recombinant P703P runs at a slightly higher molecular weight since it is epitope tagged. In lysates and supernatants from cells transfected with full length P703P, a 30 kDa band corresponding to P703P was observed. To assure specificity, lysates from HEK293 cells stably transfected with a control plasmid were also tested and were negative for P703P expression. Other anti-P703P antibodies showed similar results.

Immunohistochemical studies were performed as described above, using anti-P703P monoclonal antibody. P703P was found to be expressed at high levels in normal prostate and prostate tumor tissue but was not detectable in all other tissues tested (breast tumor, lung tumor and normal kidney).

EXAMPLE 19

CHARACTERIZATION OF CELL SURFACE EXPRESSION AND CHROMOSOME LOCALIZATION OF THE PROSTATE-SPECIFIC ANTIGEN P501S

This example describes studies demonstrating that the prostate-specific antigen P501S is expressed on the surface of cells, together with studies to determine the probable chromosomal location of P501S.

The protein P501S (SEQ ID NO: 113) is predicted to have 11 transmembrane domains. Based on the discovery that the epitope recognized by the anti-P501S monoclonal antibody 10E3-G4-D3 (described above in Example 17) is intracellular, it was predicted that following transmembrane determinants would allow the prediction of extracellular domains of P501S. Fig. 9 is a schematic representation of the P501S protein showing the predicted location of the transmembrane domains and the intracellular epitope described in Example 17. Underlined sequence represents the predicted transmembrane domains, bold sequence represents the predicted extracellular domains, and italicized sequence represents the predicted intracellular domains. Sequence that is both bold and underlined represents sequence employed to generate polyclonal rabbit serum. The location of the transmembrane domains was predicted using HHMTOP as

described by Tusnady and Simon (Principles Governing Amino Acid Composition of Integral Membrane Proteins: Applications to Topology Prediction, *J. Mol. Biol.* 283:489-506, 1998).

Based on Fig. 9, the P501S domain flanked by the transmembrane domains corresponding to amino acids 274-295 and 323-342 is predicted to be extracellular. The peptide of SEQ ID NO: 518 corresponds to amino acids 306-320 of P501S and lies in the predicted extracellular domain. The peptide of SEQ ID NO: 519, which is identical to the peptide of SEQ ID NO: 518 with the exception of the substitution of the histidine with an asparagine, was synthesized as described above. A Cys-Gly was added to the C-terminus of the peptide to facilitate conjugation to the carrier protein. Cleavage of the peptide from the solid support was carried out using the following cleavage mixture: trifluoroacetic acid:ethanediol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for two hours, the peptide was precipitated in cold ether. The peptide pellet was then dissolved in 10% v/v acetic acid and lyophilized prior to purification by C18 reverse phase hplc. A gradient of 5-60% acetonitrile (containing 0.05% TFA) in water (containing 0.05% TFA) was used to elute the peptide. The purity of the peptide was verified by hplc and mass spectrometry, and was determined to be >95%. The purified peptide was used to generate rabbit polyclonal antisera as described above.

Surface expression of P501S was examined by FACS analysis. Cells were stained with the polyclonal anti-P501S peptide serum at 10 µg/ml, washed, incubated with a secondary FITC-conjugated goat anti-rabbit Ig antibody (ICN), washed and analyzed for FITC fluorescence using an Excalibur fluorescence activated cell sorter. For FACS analysis of transduced cells, B-LCL were retrovirally transduced with P501S. To demonstrate specificity in these assays, B-LCL transduced with an irrelevant antigen (P703P) or nontransduced were stained in parallel. For FACS analysis of prostate tumor cell lines, Lncap, PC-3 and DU-145 were utilized. Prostate tumor cell lines were dissociated from tissue culture plates using cell dissociation medium and stained as above. All samples were treated with propidium iodide (PI) prior to FACS analysis, and data was obtained from PI-excluding (i.e. intact and non-permeabilized) cells. The rabbit polyclonal serum generated against the peptide of SEQ ID NO: 519 was shown to specifically recognize the surface of cells transduced to express P501S, demonstrating that the epitope recognized by the polyclonal serum is extracellular.

To determine biochemically if P501S is expressed on the cell surface, peripheral membranes from Lncap cells were isolated and subjected to Western blot analysis. Specifically, Lncap cells were lysed using a dounce homogenizer in 5 ml of homogenization buffer (250 mM

sucrose, 10 mM HEPES, 1mM EDTA, pH 8.0, 1 complete protease inhibitor tablet (Boehringer Mannheim)). Lysate samples were spun at 1000 g for 5 min at 4 °C. The supernatant was then spun at 8000g for 10 min at 4 °C. Supernatant from the 8000g spin was recovered and subjected to a 100,000g spin for 30 min at 4 °C to recover peripheral membrane. Samples were then separated by SDS-PAGE and Western blotted with the mouse monoclonal antibody 10E3-G4-D3 (described above in Example 17) using conditions described above. Recombinant purified P501S, as well as HEK293 cells transfected with and over-expressing P501S were included as positive controls for P501S detection. LCL cell lysate was included as a negative control. P501S could be detected in Lncap total cell lysate, the 8000g (internal membrane) fraction and also in the 100,000g (plasma membrane) fraction. These results indicate that P501S is expressed at, and localizes to, the peripheral membrane.

To demonstrate that the rabbit polyclonal antiserum generated to the peptide of SEQ ID NO: 519 specifically recognizes this peptide as well as the corresponding native peptide of SEQ ID NO: 518, ELISA analyses were performed. For these analyses, flat-bottomed 96 well microtiter plates were coated with either the peptide of SEQ ID NO: 519, the longer peptide of SEQ ID NO: 520 that spans the entire predicted extracellular domain, the peptide of SEQ ID NO: 521 which represents the epitope recognized by the P501S-specific antibody 10E3-G4-D3, or a P501S fragment (corresponding to amino acids 355-526 of SEQ ID NO: 113) that does not include the immunizing peptide sequence, at 1 µg/ml for 2 hours at 37 °C. Wells were aspirated, blocked with phosphate buffered saline containing 1% (w/v) BSA for 2 hours at room temperature and subsequently washed in PBS containing 0.1% Tween 20 (PBST). Purified anti-P501S polyclonal rabbit serum was added at 2 fold dilutions (1000 ng - 125 ng) in PBST and incubated for 30 min at room temperature. This was followed by washing 6 times with PBST and incubating with HRP-conjugated goat anti-rabbit IgG (H+L) Affinipure F(ab') fragment at 1:20000 for 30 min. Plates were then washed and incubated for 15 min in tetramethyl benzidine. Reactions were stopped by the addition of 1N sulfuric acid and plates were read at 450 nm using an ELISA plate reader. As shown in Fig. 11, the anti-P501S polyclonal rabbit serum specifically recognized the peptide of SEQ ID NO: 519 used in the immunization as well as the longer peptide of SEQ ID NO: 520, but did not recognize the irrelevant P501S-derived peptides and fragments.

In further studies, rabbits were immunized with peptides derived from the P501S sequence and predicted to be either extracellular or intracellular, as shown in Fig. 9. Polyclonal rabbit sera were isolated and polyclonal antibodies in the serum were purified, as described above.

To determine specific reactivity with P501S, FACS analysis was employed, utilizing either B-LCL transduced with P501S or the irrelevant antigen P703P, of B-LCL infected with vaccinia virus-expressing P501S. For surface expression, dead and non-intact cells were excluded from the analysis as described above. For intracellular staining, cells were fixed and permeabilized as described above. Rabbit polyclonal serum generated against the peptide of SEQ ID NO: 548, which corresponds to amino acids 181-198 of P501S, was found to recognize a surface epitope of P501S. Rabbit polyclonal serum generated against the peptide SEQ ID NO: 551, which corresponds to amino acids 543-553 of P501S, was found to recognize an epitope that was either potentially extracellular or intracellular since in different experiments intact or permeabilized cells were recognized by the polyclonal sera. Based on similar deductive reasoning, the sequences of SEQ ID NO: 541-547, 549 and 550, which correspond to amino acids 109-122, 539-553, 509-520, 37-54, 342-359, 295-323, 217-274, 143-160 and 75-88, respectively, of P501S, can be considered to be potential surface epitopes of P501S recognized by antibodies.

The chromosomal location of P501S was determined using the GeneBridge 4 Radiation Hybrid panel (Research Genetics). The PCR primers of SEQ ID NO: 528 and 529 were employed in PCR with DNA pools from the hybrid panel according to the manufacturer's directions. After 38 cycles of amplification, the reaction products were separated on a 1.2% agarose gel, and the results were analyzed through the Whitehead Institute/MIT Center for Genome Research web server (<http://www-genome.wi.mit.edu/cgi-bin/contig/rhmapper.pl>) to determine the probable chromosomal location. Using this approach, P501S was mapped to the long arm of chromosome 1 at WI-9641 between q32 and q42. This region of chromosome 1 has been linked to prostate cancer susceptibility in hereditary prostate cancer (Smith *et al. Science* 274:1371-1374, 1996 and Berthon *et al. Am. J. Hum. Genet.* 62:1416-1424, 1998). These results suggest that P501S may play a role in prostate cancer malignancy.

From the foregoing, it will be appreciated that, although specific embodiments of the invention have been described herein for the purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the present invention is not limited except as by the appended claims.

CLAIMS

1. An isolated polypeptide comprising at least an immunogenic portion of a prostate-specific protein, or a variant thereof, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536;

(b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and

(c) complements of any of the sequence of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID No: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NO: 108, 112, 113, 114, 172, 176, 178, 327, 329, 331, 339, 383, 477-483, 496, 504, 505, 519, 520, 522, 525, 527, 532, 534 and 537-550.

4. An isolated polynucleotide encoding at least 15 contiguous amino acid residues of a prostate-specific protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the protein
5 comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413,
10 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a prostate-specific protein, or a
15 variant thereof, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396,
20 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing sequences.

6. An isolated polynucleotide comprising a sequence recited in any one
25 of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530,
30 531, 533, 535 and 536.

7. An isolated polynucleotide comprising a sequence that hybridizes under moderately stringent conditions to a sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector comprising a polynucleotide according to any one of claims 4-8.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a prostate-specific protein, the protein comprising an amino acid sequence encoded by a polynucleotide sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536 or a complement of any of the foregoing polynucleotide sequences.

12. A monoclonal antibody that specifically binds to an amino acid sequence selected from the group consisting of SEQ ID NO: 496, 504, 505, 509-517, 519, 520, 522 and 539-551.

5 13. A monoclonal antibody comprising a complementarity determining region selected from the group consisting of SEQ ID NO: 502, 503 and 506-508.

10 14. A fusion protein comprising at least one polypeptide according to claim 1.

15 15. A fusion protein according to claim 14, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.

16 16. A fusion protein according to claim 14, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of claim 1.

20 17. A fusion protein according to claim 14, wherein the fusion protein comprises an affinity tag.

25 18. An isolated polynucleotide encoding a fusion protein according to claim 14.

30 19. A pharmaceutical composition comprising a physiologically acceptable carrier and at least one component selected from the group consisting of:

- (a) a polypeptide according to claim 1;
- (b) a polynucleotide according to claim 4;
- (c) an antibody according to any one of claims 11-13;
- (d) a fusion protein according to claim 14; and

(e) a polynucleotide according to claim 18.

20. A vaccine comprising an immunostimulant and at least one component selected from the group consisting of:

- 5 (a) a polypeptide according to claim 1;
(b) a polynucleotide according to claim 4;
(c) an antibody according to any one of claims 11-13;
(d) a fusion protein according to claim 14; and
(e) a polynucleotide according to claim 18.

10

21. A vaccine according to claim 20, wherein the immunostimulant is an adjuvant.

22. A vaccine according to claim 20, wherein the immunostimulant
15 induces a predominantly Type I response.

23. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 19.

20

24. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 20.

25. A pharmaceutical composition comprising an antigen-presenting cell
25 that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

26. A pharmaceutical composition according to claim 25, wherein the antigen presenting cell is a dendritic cell or a macrophage.

27. A vaccine comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with an immunostimulant.

5 28. A vaccine according to claim 27, wherein the immunostimulant is an adjuvant.

29. A vaccine according to claim 27, wherein the immunostimulant induces a predominantly Type I response.

10 30. A vaccine according to claim 27, wherein the antigen-presenting cell is a dendritic cell.

31. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide encoded by a polynucleotide recited in any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, and thereby inhibiting the development of a cancer in the patient.

20 32. A method according to claim 31, wherein the antigen-presenting cell is a dendritic cell.

33. A method according to any one of claims 23, 24 and 31, wherein the cancer is prostate cancer.

34. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

39. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 38.

5 40. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

10 (i) a polypeptide according to claim 1;
(ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536;

15 (iii) a polynucleotide encoding a polypeptide of (i) or (ii); or
(iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate; and

(b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

20

41. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

25 (i) a polypeptide according to claim 1;
(ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536;

30

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); or

(i) polynucleotides recited in any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536; and

(ii) complements of the foregoing polynucleotides;

5 wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the prostate-specific protein from the sample.

35. A method according to claim 34, wherein the biological sample is
10 blood or a fraction thereof.

36. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 50.

15

37. A method for stimulating and/or expanding T cells specific for a prostate-specific protein, comprising contacting T cells with at least one component selected from the group consisting of:

(i) a polypeptide according to claim 1;

20

(ii) a polypeptide encoded by a polynucleotide comprising a sequence provided in any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536;

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); and

(iv) an antigen presenting cell that expresses a polypeptide of (i) or (ii),

25

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

38. An isolated T cell population, comprising T cells prepared according to the method of claim 37.

30

(iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate;

(b) cloning at least one proliferated cell to provide cloned T cells; and

5 (c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

42. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

10 (a) contacting a biological sample obtained from a patient with a binding agent that binds to a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NO: 1-111,
15 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

20 (c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

43. A method according to claim 42, wherein the binding agent is an antibody.

25

44. A method according to claim 43, wherein the antibody is a monoclonal antibody.

45. A method according to claim 42, wherein the cancer is prostate
30 cancer.

46. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

- 5 (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides;
- 10 (b) detecting in the sample an amount of polypeptide that binds to the binding agent;
- (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and
- 15 (d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

47. A method according to claim 46, wherein the binding agent is an antibody.

20 48. A method according to claim 47, wherein the antibody is a monoclonal antibody.

49. A method according to claim 46, wherein the cancer is a prostate cancer.

50. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

- 30 (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein,

wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides;

5 (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

10

51. A method according to claim 50, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

15

52. A method according to claim 50, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

53. A method for monitoring the progression of a cancer in a patient,
20 comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315,
25 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from
30 the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

5 54. A method according to claim 53, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

10 55. A method according to claim 53, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

56. A diagnostic kit, comprising:

- 15 (a) one or more antibodies according to claim 11; and
 (b) a detection reagent comprising a reporter group.

57. A kit according to claim 56, wherein the antibodies are immobilized on a solid support.

20 58. A kit according to claim 56, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

25 59. A kit according to claim 56, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.

30 60. An oligonucleotide comprising 10 to 40 contiguous nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45,

47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides.

61. A oligonucleotide according to claim 60, wherein the oligonucleotide comprises 10-40 contiguous nucleotides recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-476, 524, 526, 530, 531, 533, 535 and 536.

15

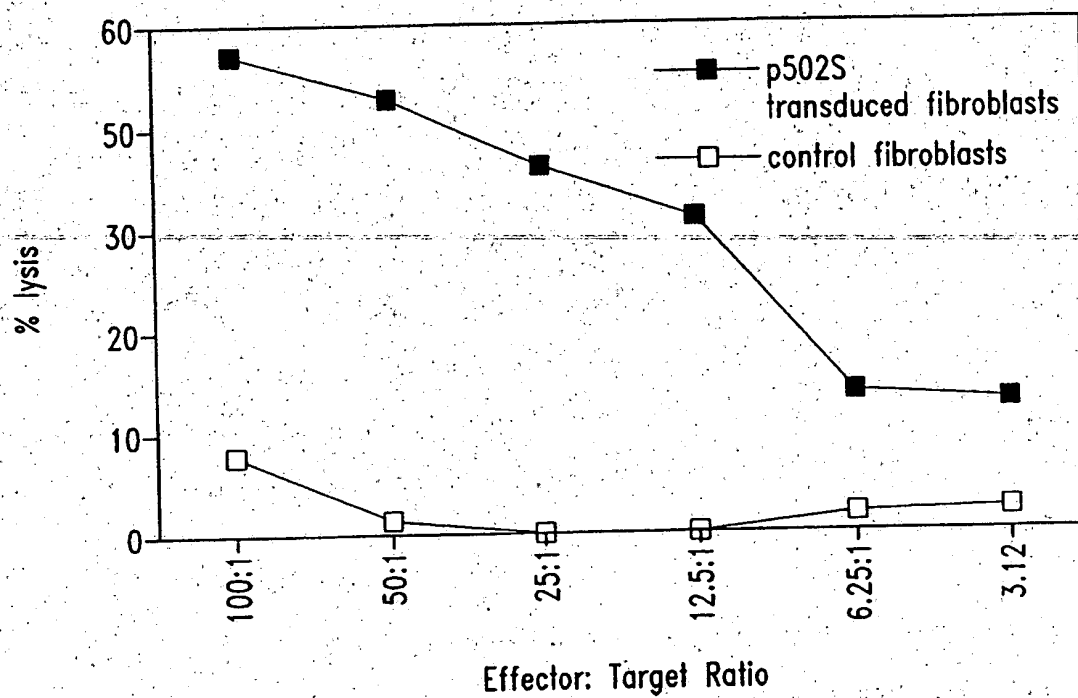
62. A diagnostic kit, comprising:
(a) an oligonucleotide according to claim 61; and
(b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

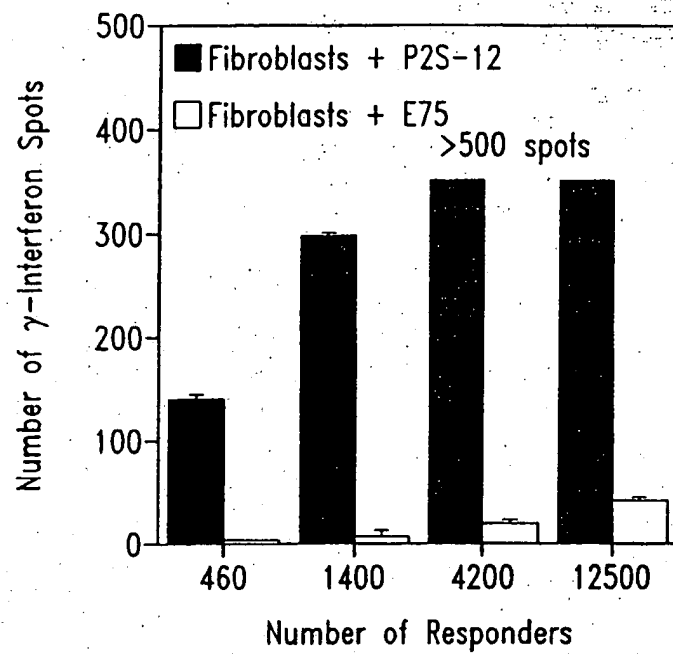
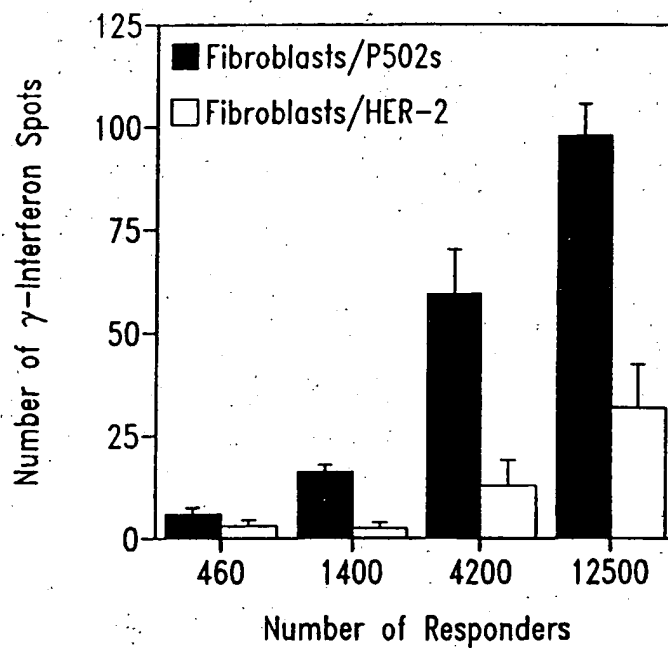
20

63. A host cell according to claim 10, wherein the cell is selected from the group consisting of: *E. coli*, baculovirus and mammalian cells.

64. A recombinant protein produced by a host cell according to claim 10.

25

*Fig. 1*

*Fig. 2A**Fig. 2B*

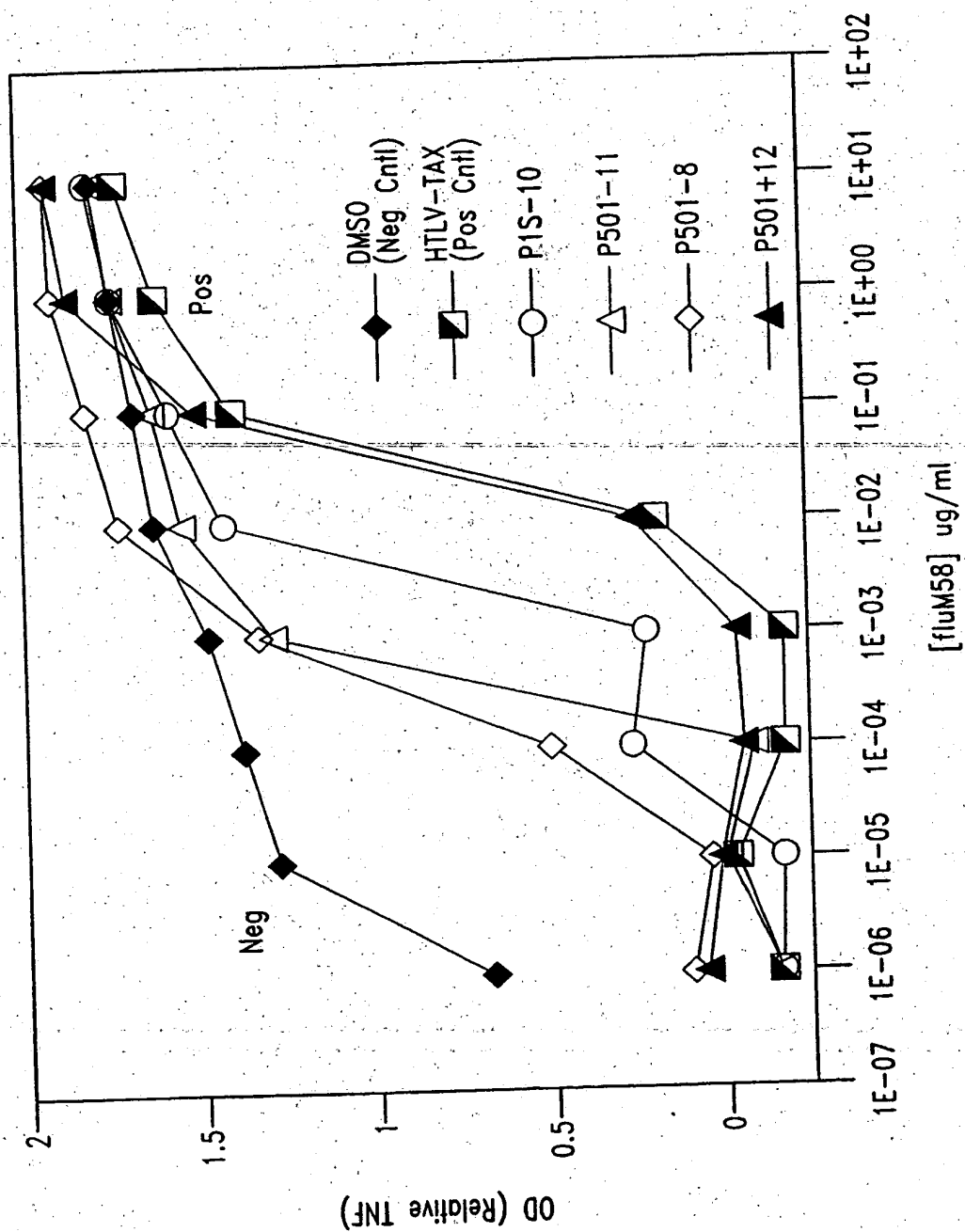
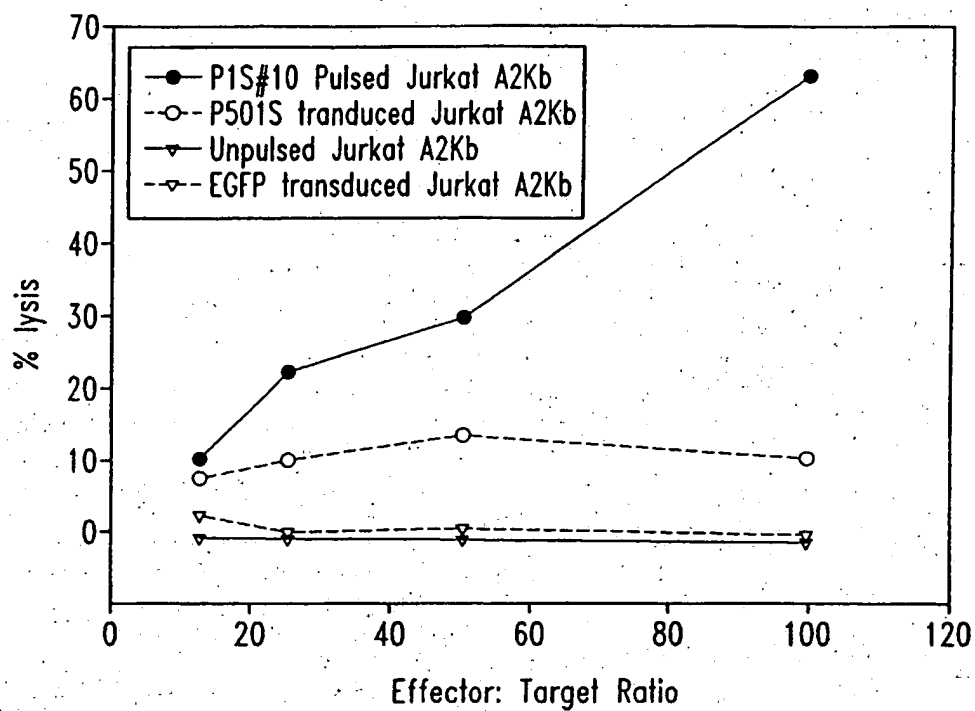
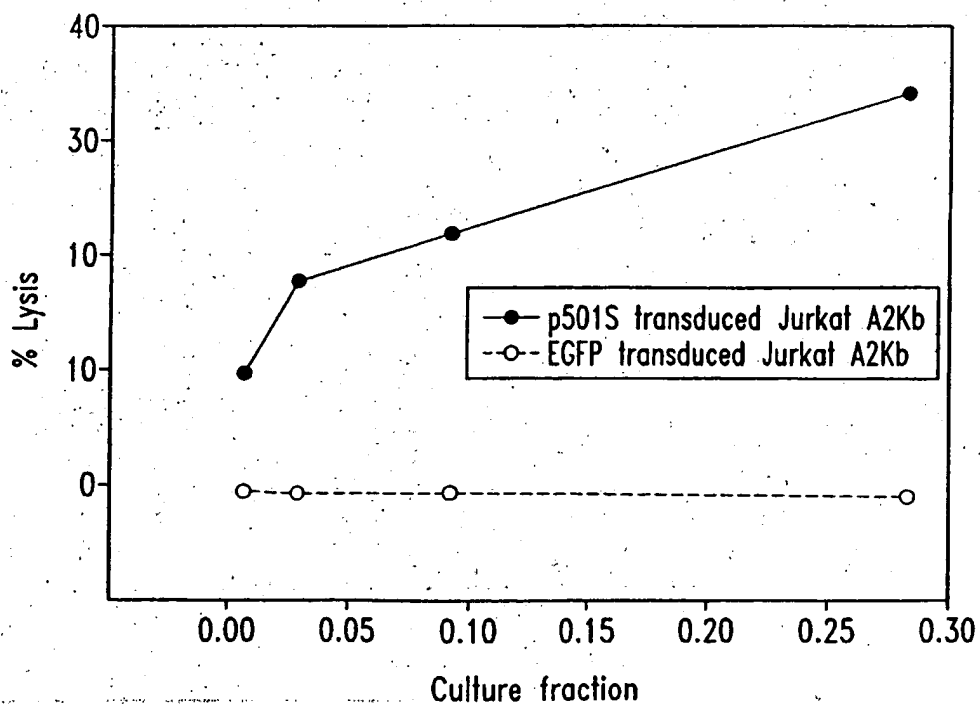
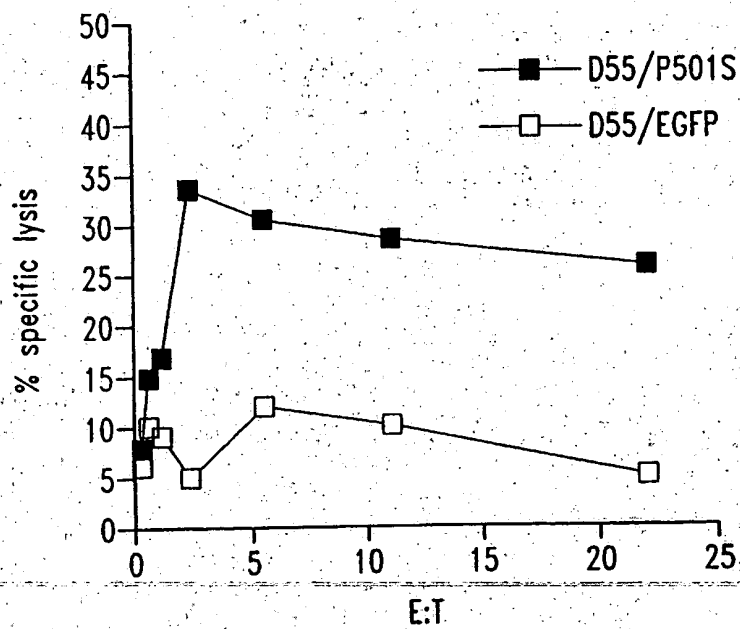
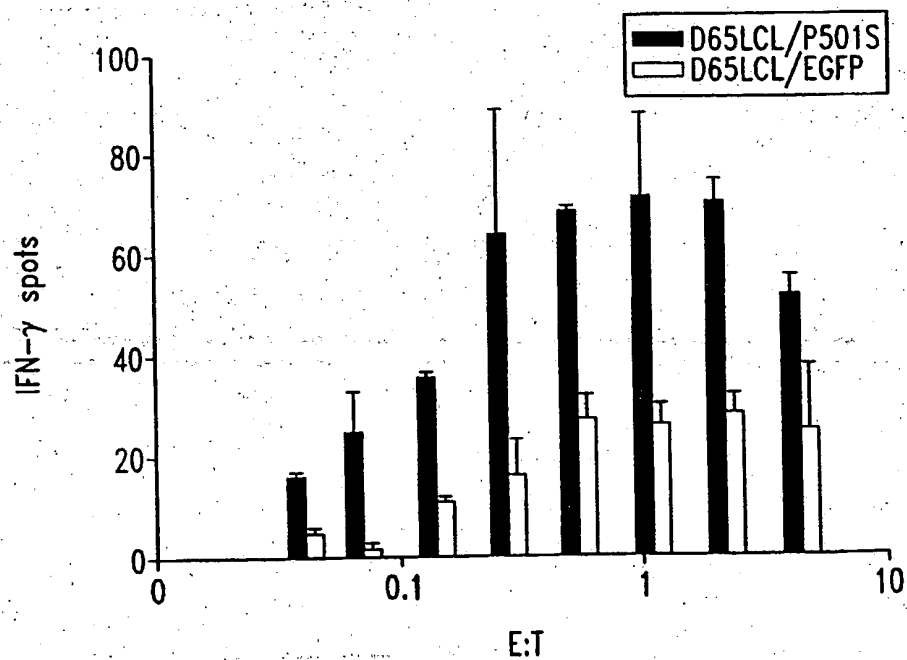
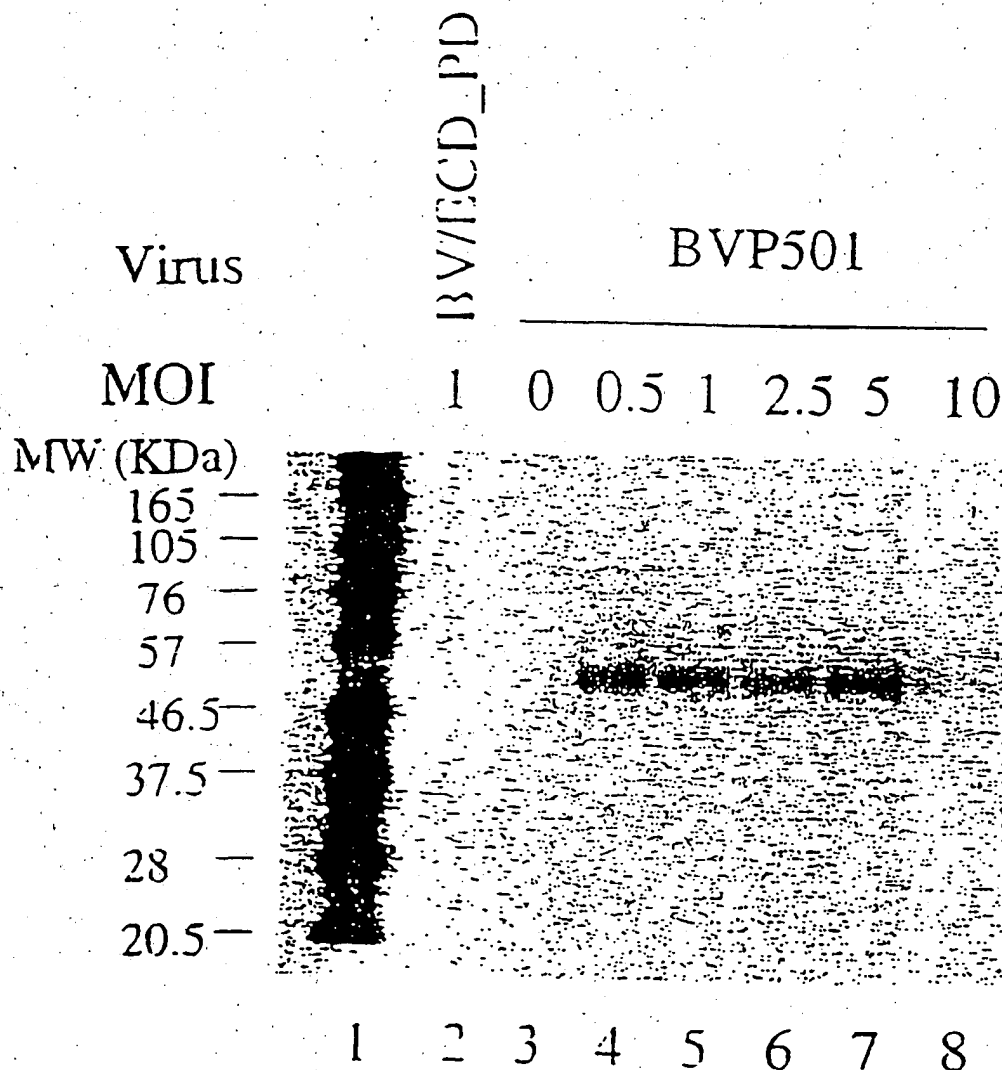


Fig. 3

*Fig. 4**Fig. 5*

*Fig. 6A**Fig. 6B*

Expression of P501S by the Baculovirus Expression System



0.6 million high 5 cells in 6-well plate were infected with an unrelated control virus BV/ECD_PD (lane 1), without virus (lane 3), or with recombinant baculovirus for P501 at different MOIs (lane 4 - 8). Cell lysates were run on SDS-PAGE under the reducing conditions and analyzed by Western blot with a monoclonal antibody against P501S (P501S-10E3-G4D3). Lane 1 is the biotinylated protein molecular weight marker (BioLabs).

Fig. 7

Figure 8. Mapping of the epitope recognized by 10E3-G4-D3

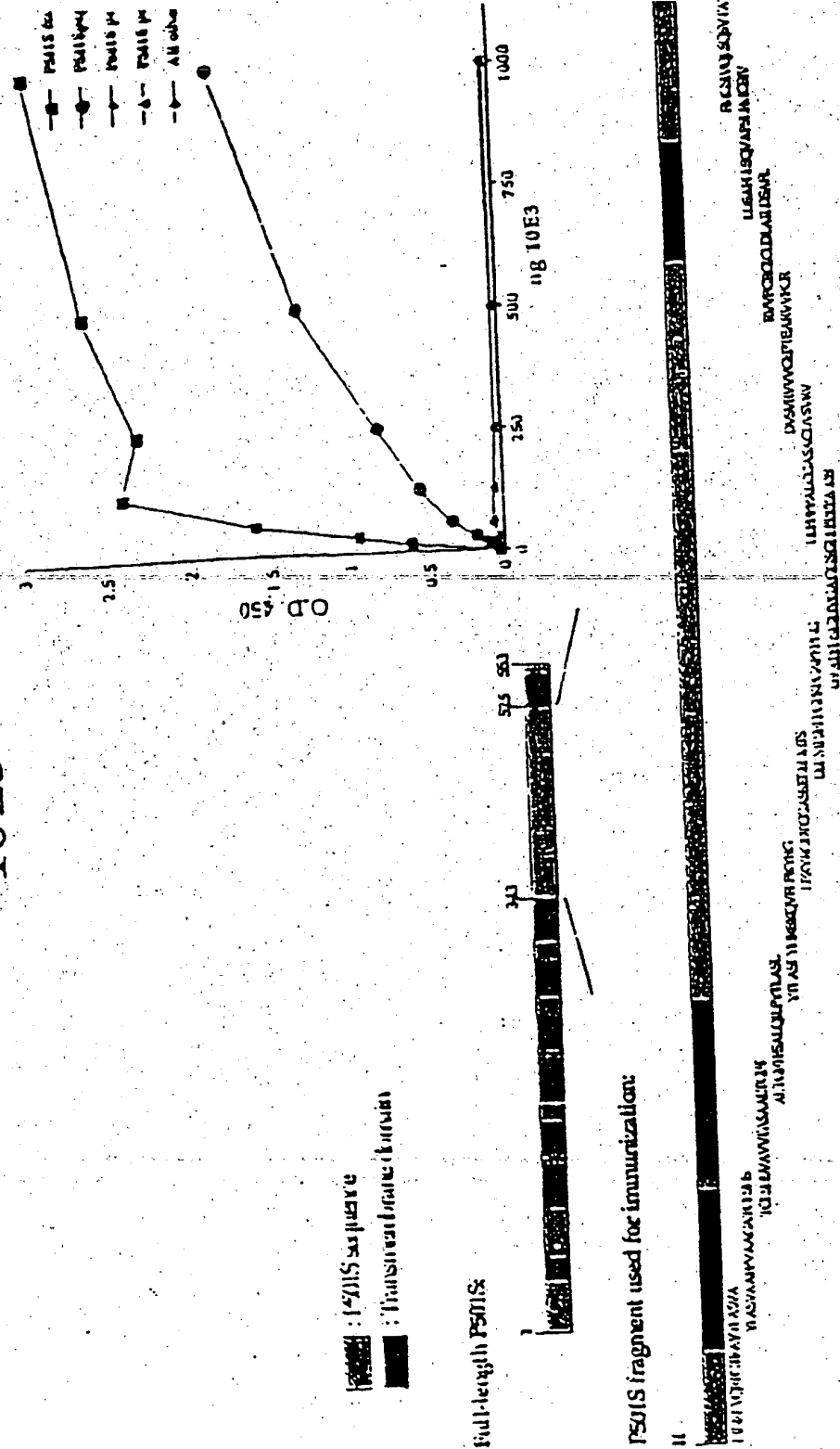


Fig. 8

Schematic of P501S with predicted
transmembrane, cytoplasmic, and extracellular regions

MVQRLWVSRLLRHRK AQLLLVNLLTFGLEVCLAAGIT YVPPLLLEVGVEEKFM
TMVLGIGPVLGLVCYPLLGSAS
 DHWRGRYGRRRP FIWALSLGILLSLFLIPRAGWL AGLLCPDPRPLE LALLILGVGLLDFCGQVCFTPL
 EALLSDLFRDPDHCRQ AYSVYAFMISLGGCLGYLLPAI DWDTSALAPYLGTQEE
 CLFGLLTLIFLTCVAATLLV AEEAALGPTEPAEGLSAPSLSPHCCPCRARLAFRNLGALLPRL
HQLCCRMPTLRR LFVAELCSWMALMTFTLFYTDF VGEGLYQGVPRAEPGTEARRHYDEGVR
MGSLGLFLQCAISLVFSLVM DRLVQRFGTRAVYLAS VAAFPVAAGATCLSHSVAVVTA SAA
 LTGFTFSALQILPYTLASLY HREKQVFLPKYRGDTGGASSEDSLMTSFLPGPKPGAPFPNGHVGAGGSGL
 LPPPPALCGASACDVSVRVVVGEPTEARVVPGRG ICLDLAILDSAFLLSQVAPSLF MGSIVQLSQS
VTAYMVSAAGLGLVAIYFAT QVVFDKSDLAKYSA

Underlined sequence: Predicted transmembrane domain; **Bold sequence**:
 Predicted extracellular domain; *Italic sequence*: Predicted intracellular
 domain. Sequence in bold/underlined: used generate polyclonal rabbit
 serum

Localization of domains predicted using HMMTOP (G.E. Tusnady and I. Simon
 (1998) Principles Governing Amino Acid Composition of Integral Membrane
 Proteins: Applications to topology Prediction. J. Mol Biol. 283, 489-506.

Fig. 9

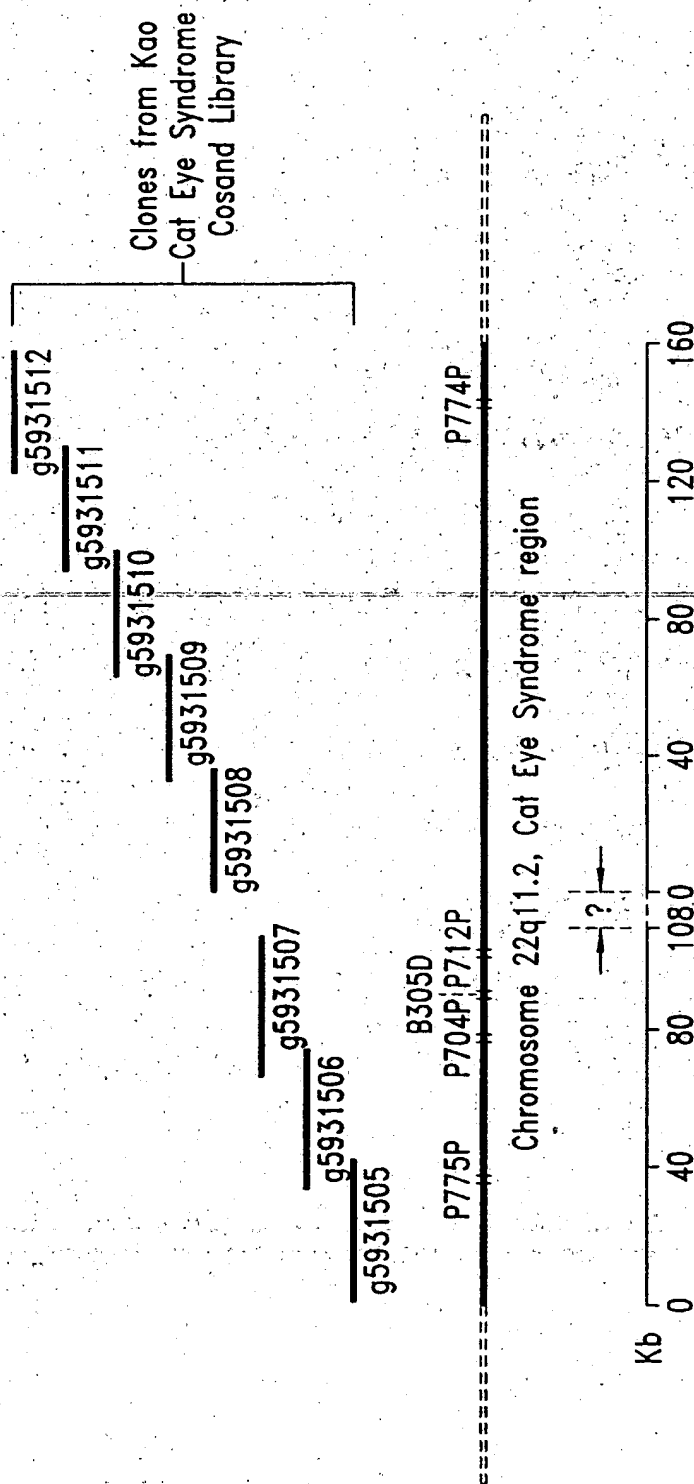
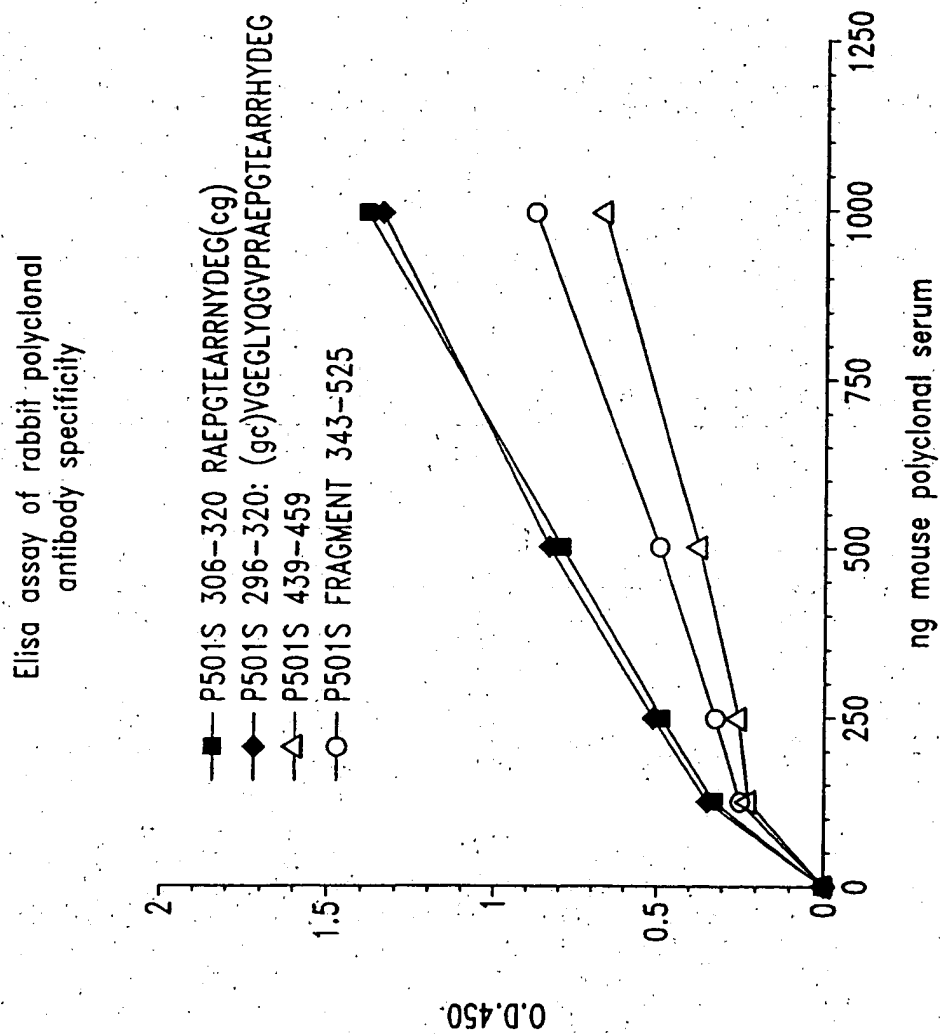


Fig. 10

*Fig. 11*

SEQUENCE LISTING

<110> Corixa Corporation
 Xu, Jiangchun
 Dillon, Davin C.
 Mitcham, Jennifer L.
 Harlocker, Susan Louise
 Jiang Yuqui
 Reed, Steven G.
 Kalos, Michael
 Fanger, Gary
 Retter, Mark
 Solk, John
 Day, Craig
 Skeiky, Yasir A.W.
 Wang, Aijun

<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND
 DIAGNOSIS OF PROSTATE CANCER

<130> 210121.42720PC

<140> PCT

<141> 2000-11-09

<160> 551

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 814

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(814)

<223> n = A,T,C or G

<400> 1

tttttttttt	tttttcacag	tataacagct	ctttatttct	gtgagttcta	ctaggaaatc	60
atcaaactctg	aggggtgtct	ggaggacttc	aatacacctc	cccccatagt	gaatcagctt	120
ccaggggggtc	cagtcctctt	ccttacttca	tccccatccc	atgccaaagg	aagaccctcc	180
ctccttggtc	cacagccttc	tctaggtctc	ccagtgcctc	caggacagag	tgggttatgt	240
tttcagctcc	atccttgctg	tgagtgtctg	gtgctgtgtg	cctccagctt	ctgctcagtg	300
cttcattggac	agtgtccagc	acatgtcact	ctccactctc	tcagtgtgga	tccactagtt	360
ctagagcggc	cgccaccgcg	gtggagctcc	agcttttgtt	cccttttagtg	agggttaatt	420
gcgcgttgg	cgtaatcatg	gtcataactg	tttcctgtgt	gaaattgtta	tccgctcaca	480
attccacaca	acatacgagc	cggaagcata	aagtgtaaag	cctgggggtgc	ctaattgagt	540
anctaactca	cattaattgc	gttgcgctca	ctgnccgctt	tccagtcnng	aaaactgtcg	600
tgccagctgc	attaatgaat	cggccaacgc	ncgggggaaa	gcggtttgcg	ttttgggggc	660
tcttcgcgtt	ctcgtcact	nantcctgcg	ctcggtcntt	cggtgcggg	gaacggtatc	720
actcctcaa	ggnggtatta	cggttatccn	naaatcnngg	gatacccnng	aaaaaanttt	780
aacaaaagg	cancaaagg	cngaaacgta	aaaa			814

<210> 2

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(816)

<223> n = A,T,C or G

<400> 2

acagaaatgt	tggatggtgg	agcacctttc	tatacgactt	acaggacagc	agatggggaa	60
ttcatggctg	ttggagcaat	agaaccccag	ttctacgagc	tgctgatcaa	aggacttgga	120
ctaaagtctg	atgaacttcc	caatcagatg	agcatggatg	attggccaga	aatgaagaag	180
aagtttgcag	atgtatttgc	aaagaagacg	aaggcagagt	ggtgtcaa	ctttgacggc	240
acagatgcct	gtgtgactcc	ggttctgact	tttgaggagg	ttgttcatca	tgatcacaac	300
aaggaacggg	gctcgtttat	caccagttag	gagcaggacg	tgagcccccg	ccctgcacct	360
ctgctgttaa	acaccccagc	catcccttct	ttcaaaaggg	atccactagt	tctagaagcg	420
gccgccaccg	cgggtggagct	ccagcttttg	ttccctttag	tgagggttaa	ttgcgcgctt	480
ggcgtaatca	tggtcatagc	tgtttctgt	gtgaaattgt	tatccgctca	caattccccc	540
aacatacgag	ccggaacata	aagtgttaag	cctgggggtgc	ctaagtantg	agctaactcn	600
cattaattgc	gttgcgctca	ctgcccgcct	tccagtcggg	aaaactgtcg	tgccactgcn	660
ttantgaatc	ngccaccccc	cgggaaaagg	cggttgcntt	ttgggcctct	tccgctttcc	720
tcgctcattg	atcctngcnc	ccggtcttcg	gctgcggnga	acggttcact	cctcaaaggc	780
ggtntnccgg	ttatccccaa	acnggggata	ccngga			816

<210> 3

<211> 773

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(773)

<223> n = A,T,C or G

<400> 3

cttttgaaag	aagggatggc	tgggggtgtt	aacagcagag	gtgcagggcg	ggggctcacg	60
tcttgctcct	cactgggtgat	aaacgagccc	cgttccttgt	tgtgatcatg	atgaacaacc	120
tcttcaaaag	tcagaaccgg	agtcacacag	gcatctgtgc	cgtcaaagat	ttgacaccac	180
tctgccttcg	tcttctttgc	aaatacatct	gcaaacttct	tcttcatttc	tggccaatca	240
tccatgctca	tctgattggg	aagttcatca	gacttttagtc	canntccttt	gatcagcagc	300
tcgtagaact	ggggttctat	tgctccaaca	gccatgaatt	ccccatctgc	tgctcgttaa	360
gtcgtataga	aaggtgctcc	accatccaac	atgtttctgtc	ctcgaggggg	ggcccgggtac	420
ccaattcgcc	ctatantgag	tcgtattacg	cgcgctcact	ggccgctcgtt	ttacaacgtc	480
gtgactggga	aaaccctggg	cgttaccaac	ttaatcgctt	tgacgacat	ccccctttcg	540
ccagctgggc	gtaatancca	aaaggcccg	accgatcgcc	cttccaacag	ttgcgcacct	600
gaatgggnaa	atgggacccc	cctgttaccc	cgcattnaac	ccccgcnggg	tttngttgtt	660
acccccacnt	nnaccgctta	cactttgcca	gcgccttanc	gcccgcctcc	tttcnctttt	720
cttcccttcc	tttcnncn	ctttcccccg	gggtttcccc	cntcaaacc	cna	773

<210> 4

<211> 828

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(828)

<223> n = A,T,C or G

<400> 4

cctcctgagt	cctactgacc	tgtgctttct	ggtgtggagt	ccagggctgc	taggaaaagg	60
aatgggcaga	cacaggtgta	tgccaatggt	tctgaaatgg	gtataatttc	gtcctctcct	120
tcggaacact	ggctgtctct	gaagacttct	cgctcagttt	cagtgaggac	acacacaaag	180
acgtgggtga	ccatgttggt	tgtgggggtgc	agagatggga	gggggtggggc	ccaccctgga	240
agagtggaca	gtgacacaag	gtggacactc	tctacagatc	actgaggata	agctggagcc	300
acaatgcatg	aggcacacac	acagcaagga	tgacnctgta	aacatagccc	acgctgtcct	360
gnngggcactg	ggaagcctan	atnaggccgt	gagcanaaag	aaggggagga	tccactagtt	420
ctanagcggc	cgccaccgcg	gtgganctcc	ancttttggt	cccttttagtg	aggggttaatt	480
gcgcgcttgg	cntaatcatg	gtcatanctn	tttcctgtgt	gaaattgtta	tccgctcaca	540
attccacaca	acatacganc	cggaacata	aantgtaaac	ctgggggtgcc	taatgantga	600
ctaactcaca	ttaattgcgt	tgcgctcact	gcccgccttc	caatcnggaa	acctgtcttg	660
ccncttgcat	tnatgaatcn	gccaaccccc	ggggaaaagc	gtttgcgttt	tgggcgctct	720
tccgcttctc	cntcantta	ntccctnenc	tcggtcattc	cggctgcngc	aaaccgggttc	780
accnctcca	aaggggggat	tccggtttcc	ccnaatccgg	gganance		828

<210> 5
 <211> 834
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (834)
 <223> n = A,T,C or G

<400> 5

tttttttttt	tttttactga	tagatggaat	ttattaagct	tttcacatgt	gatagcacat	60
agtttttaatt	gcatccaaag	tactaacaaa	aactctagca	atcaagaatg	gcagcatggt	120
atttttataac	aatcaacacc	tgtggctttt	aaaatttggt	tttcataaga	taattttatac	180
tgaagtaaat	ctagccatgc	ttttaaaaaa	tgcttttaggt	cactccaagc	ttggcagtta	240
acatttggca	taaaacaata	taaaacaatc	acaatttaat	aaataacaaa	tacaacattg	300
taggccataa	tcatatacag	tataaggaaa	aggtggtagt	gttgagtaag	cagttattag	360
aatagaatac	cttggcctct	atgcaaatat	gtctagacac	tttgattcac	tcagccctga	420
cattcagttt	tcaaagtagg	agacagggtc	tacagtatca	ttttacagtt	tccaacacat	480
tgaaaacaag	tagaaaatga	tgagttgatt	tttattaatg	cattacatcc	tcaagagtta	540
tcaccaaccc	ctcagttata	aaaaattttc	aagttatatt	agtcataata	cttgggtgtgc	600
ttatttttaa	ttagtgctaa	atggattaag	tgaagacaac	aatgggtccc	taatgtgatt	660
gatattggtc	atttttacca	gcttctaaat	ctnaactttc	aggcttttga	actggaacat	720
tgnatnacag	tgttccanag	ttncaacctc	ctggaacatt	acagtgtgct	tgattcaaaa	780
tgttattttg	ttaaaaatta	aatttttaacc	tggtggaaaa	ataatttgaa	atna	834

<210> 6
 <211> 818
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (818)
 <223> n = A,T,C or G

<400> 6

tttttttttt	tttttttttt	aagaccctca	tcaatagatg	gagacatata	gaaatagtca	60
aaccacatct	acaaaatgcc	agtatcaggc	ggcggttcg	aagccaaagt	gatgtttgga	120
tgtaaagtga	aatattagtt	ggcggtatga	gcagatagtg	aggaaagttg	agccaataat	180
gacgtgaagt	ccgtggaagc	ctgtggctac	aaaaaatgtt	gagccgtaga	tgcgcgtcgga	240
aatggtgaag	ggagactcga	agtactctga	ggctttagtg	agggtaaaat	agagaccag	300

taaaattgta	ataagcagtg	cttgaattat	ttggtttcgg	ttgttttcta	ttagactatg	360
gtgagctcag	gtgattgata	ctcctgatgc	gagtaatacg	gatgtgttta	ggagtgggac	420
ttctagggga	tttagcgggg	tgatgcctgt	tgggggccag	tgccctccta	gttggggggg	480
aggggctagg	ctggagtggt	aaaaggctca	gaaaaatcct	gcgaagaaaa	aaacttctga	540
ggtaataaat	aggattatcc	cgtatcgaag	gccttttttg	acaggtgggt	tgtgtgggcc	600
ttggtatgtg	ctttctcgtg	ttacatcgcg	ccatcattgg	tatatgggta	gtgtgttggg	660
ttantanggc	ctantatgaa	gaacttttgg	antggaatta	aatcaatngc	ttggccggaa	720
gtcattanga	nggctnaaaa	ggccctgtta	ngggtctggg	ctnggtttta	cccnaccat	780
ggaatncncc	ccccggacna	ntgnatccct	attcttaa			818

<210> 7

<211> 817

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (817)

<223> n = A,T,C or G

<400> 7

tttttttttt	tttttttttt	tggctctaga	gggggtagag	ggggtgctat	agggtaaata	60
cgggccctat	ttcaaagatt	tttaggggaa	ttaattctag	gacgatgggt	atgaaactgt	120
ggtttgctcc	acagatttca	gagcattgac	cgtagtatac	ccccggtcgt	gtagcgggta	180
aagtggtttg	gttttagacgt	ccgggaattg	catctgtttt	taagcctaata	gtggggacag	240
ctcatgagtg	caagacgtct	tgtgatgtaa	ttattatacn	aatgggggct	tcaatcggga	300
gtactactcg	attgtcaacg	tcaaggagtc	gcaggtcgcc	tggttctagg	aataatgggg	360
gaagtatgta	ggaattgaag	attaatccgc	cgtagtcggg	gttctcctag	gttcaatacc	420
attggtggcc	aattgatttg	atggtaaggg	gagggatcgt	tgaactcgtc	tgttatgtaa	480
aggatncctt	ngggatggga	aggcnatnaa	ggactangga	tnaatggcgg	gcangatatt	540
tcaaacngtc	tctanttcct	gaaacgtctg	aaatgttaat	aanaattaan	tttngttatt	600
gaatnttnng	gaaaagggct	tacaggacta	gaaaccaaata	angaaaanta	atnntaangg	660
cnttatcntn	aaaggnata	accnctccta	tnatccacc	caatngnatt	ccccacnenn	720
acnattggat	nccccanttc	canaaanggc	cncccccggg	tnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	ccctngcntt	atcance			817

<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (799)

<223> n = A,T,C or G

<400> 8

catttccggg	tttactttct	aaggaaagcc	gagcggaagc	tgctaacgtg	ggaatcgggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	cgtcccagaa	ggtggacttg	gcaactgaaac	agctgggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgtcctgggg	240
tgggtggccg	angcctganc	cgctctgect	tgctgcccc	angtgggccc	ccacccccctg	300
acctgectgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	ccccacactg	gttggccttg	420
tctttgngt	gagccccatg	tccatctggg	ccactgtcng	gaccaccttt	ngggagtgtt	480
ctccttacia	ccacannatg	cccggctcct	cccggaaacc	antcccancc	tgngaaggat	540
caagnccctg	atccactnnt	notanaaccg	gcncncnccg	cngtggaaacc	cnccttntgt	600
tccttttctt	tnagggttaa	tnnccgcttg	gccttnccan	ngtccctncc	nttttccntt	660

gttnaaattg ttangcnccc nccnntcccn cnnnnnnnan cccgaccenn annttmann 720
 nccctgggggt nccnnngat tgaccenncc nccctntant tgcnttnggg nncnntgccc 780
 ctttccctct nggganncg 799

<210> 9

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 9

acgccttgat	cctcccaggc	tgggaactggt	tctgggagga	gccgggcatg	ctgtggtttg	60
taangatgac	actcccaaag	gtggctcctga	cagtggccca	gatggacatg	gggctcacct	120
caaggacaag	gccaccaggt	gcggggggccg	aagcccacat	gacccctact	ctatgagcaa	180
aatccctctg	gggggcttct	ccttgaagtc	cgccancagg	gctcagtctt	tggacccang	240
caggtcatgg	ggttgtnngc	caactggggg	ccncaacgca	aaanggcnc	gggcctcngn	300
cacccatccc	angacgggc	tacactnctg	gacctccnc	tccaccactt	tcatgcgctg	360
ttcntaccgg	cgnatntgtc	ccanctgttt	cngtgcenac	tccancttct	nggacgtgcg	420
ctacatacgc	cggantcnc	ntccccgctt	tgteccetate	cagtnccan	caacaaattt	480
cncctantg	caccnattec	cacntttnc	agntttccnc	nncgngcttc	cttntaaaag	540
ggttgancec	cggaaaatnc	cccaaagggg	ggggggcngg	tacccaactn	ccccctnata	600
gctgaantcc	ccatnaccnn	gnctcnatgg	ancntccnt	tttaannacn	ttctnaactt	660
gggaanance	ctegncctn	ccccnttaa	tccnccttg	cnangnnent	ccccnntcc	720
ncccnntng	gcntntnann	cnaaaaaggc	ccnnnancaa	tctcctnncn	cctcanttcg	780
ccanccctcg	aatcggcen	c				801

<210> 10

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(789)

<223> n = A,T,C or G

<400> 10

cagtctatnt	ggccagtggtg	gcagctttcc	ctgtggctgc	cggtgccaca	tgctgtccc	60
acagtgtggc	cgtggtgaca	gcttcagccg	ccctcaccgg	gttcaccttc	tcagccctgc	120
agatcctgcc	ctacacactg	gcctccctct	accaccggga	gaagcaggtg	ttcctgccca	180
aataccgagg	ggacactgga	ggtgctagca	gtgaggacag	cctgatgacc	agcttcctgc	240
caggccctaa	gcctggagct	ccctcccta	atggacacgt	gggtgctgga	ggcagtggcc	300
tgctccacc	tccaccgcg	ctctgcgggg	cctctgcctg	tgatgtctcc	gtacgtgtgg	360
tggtgggtga	gccaccgan	gccaggggtg	ttccgggccc	gggcatctgc	ctggacctcg	420
ccatcctgga	tagtgcttcc	tgctgtccca	ngtggcccca	tccctgttta	tgggtccat	480
tgtccagctc	agccagtctg	tcaactgccta	tatggtgtct	gccgcaggcc	tgggtctggt	540
cccatttact	ttgctacaca	ggtantattt	gacaagaacg	anttgccaa	atactcagcg	600
ttaaaaaatt	ccagcaacat	tgggggtgga	aggcctgcct	cactgggtcc	aactccccgc	660
tccgtttaac	cccattggggc	tgcgggcttg	gccgccaaatt	tctgttgctg	ccaaantnat	720
gtggctctct	gctgccacct	gttgctggct	gaagtgcnta	cngcncanct	nggggggtng	780
gngttccc						789

<210> 11

<211> 772

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(772)

<223> n = A,T,C or G

<400> 11

```

cccaccctac ccaaatatta gacaccaaca cagaaaagct agcaatggat tcccttctac      60
tttggttaaat aaataagtta aatattttaa tgcctgtgtc tctgtgatgg caacagaagg      120
accaacaggc cacatcctga taaaaggtaa gaggggggtg gatcagcaaa aagacagtgc      180
tgtgggctga ggggacctgg ttcttgtgtg ttgccccca ggactcttcc cctacaaata      240
actttcatat gttcaaatec catggaggag tgtttcatcc tagaaactcc catgcaagag      300
ctacattaaa cgaagctgca ggttaagggg cttanagatg ggaaaccagg tgactgagtt      360
tattcagctc ccaaaaaccc ttctctaggt gtgtctcaac taggaggcta gctgttaacc      420
ctgagcctgg gtaatccacc tgcagagtc cgcattcca gtgcatggaa cccttctggc      480
ctccctgtat aagtccagac tgaaaccccc ttggaaggnc tccagtcagg cagccctana      540
aactggggaa aaaagaaaag gacgccccan ccccagctg tgcantactg cactcaaca      600
gcacaggggtg gcagcaaaaa aaccacttta ctttggcaca aacaaaaact ngggggggca      660
accccggcac ccnangggg gttaacagga ancnggnaa cntggaaccc aattnaggca      720
ggcccnccac ccnnaatntt gctgggaaat ttttctccc ctaaatntt tc      772

```

<210> 12

<211> 751

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(751)

<223> n = A,T,C or G

<400> 12

```

gccccaatc cagctgccac accacccacg gtgactgcat tagttcggat gtcatacaaa      60
agctgattga agcaaccctc tactttttgg tegtgagcct tttgcttggg gcaggtttca      120
ttggctgtgt tggtagcgtt gtcattgcaa cagaatgggg gaaaggcact gttctctttg      180
aagtanggtg agtcctcaa atcogtatag ttggtgaagc cacagcactt gagcccttcc      240
atggtggtgt tccacacttg agtgaagtct tccgtgggaa cataatcttt cttgatggca      300
ggcactacca gcaacgtcag ggaagtgtc agccattgtg gtgtacacca aggcgaccac      360
agcagctgcn acctcagcaa tgaagatgan gaggangatg aagaagaacg tcncgagggc      420
acacttgctc tcagtcttan caccatanca gcccntgaaa accaananca aagaccacna      480
cnccggctgc gatgaagaaa tnaccccneg ttgacaaact tgcattggac tggganccac      540
agtggccena aaaatcttca aaaaggatgc cccatcnatt gaccccccaa atgcccactg      600
ccaacagggg ctgccccacn cncnnaacga tgancnatt gnacaagatc tnentggtct      660
tnatnaacnt gaacctgcn tngtggctcc tgttcaggnc cnnggcctga cttctnaann      720
aangaactcn gaagncacca cngganannc g      751

```

<210> 13

<211> 729

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(729)

<223> n = A,T,C or G

<400> 13

gagccaggcg	tccctctgcc	tgcccactca	gtggcaacac	ccgggagctg	ttttgtcctt	60
tgtggancct	cagcagtncc	ctctttcaga	actcantgcc	aaganccttg	aacaggagcc	120
accatgcagt	gcttcagctt	cattaagacc	atgatgatcc	tcttcaattt	gtcatctttt	180
ctgtgtggtg	cagccctggt	ggcagtgggc	atctgggtgt	caatcgatgg	ggcatccttt	240
ctgaagatct	tggggccact	gtcgtccagt	gccatgcagt	ttgtcaacgt	gggctacttc	300
ctcatcgag	ccggcggtgt	ggtcttagct	ctagggtttc	tgggctgcta	tgggtgctaag	360
actgagagca	agtgtgccct	cgtgacgttc	ttcttcaccc	tcctcctcat	cttcattgct	420
gaggttgcaa	tgtgtgtggtc	gccttggtgt	acaccacaat	ggctgagcac	ttcctgacgt	480
tgtgtgtaat	gcctgccaatc	aanaaaagat	tatgggttcc	caggaanact	tcactcaagt	540
ggttgaacac	caccatgaaa	gggctcaagt	gctgtggctt	cnnccaacta	tacggatttt	600
gaagantcac	ctacttcaaa	gaaaanagt	cctttccccc	atttctgttg	caattgacaa	660
acgtcccca	cacagccaat	tgaaaacctg	caaccaaccc	aaanggggtcc	ccaaccanaa	720
attnaagg						729

<210> 14

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(816)

<223> n = A,T,C or G

<400> 14

tgtcttctct	caaagttggt	cttgttgcca	taacaaccac	cataggtaaa	gcgggcgag	60
tgttcgtga	aggggttgta	gtaccagcgc	gggatgctct	ccttgagag	tcctgtgtct	120
ggcaggtcca	cgcagtgcgc	tttgtcactg	gggaaatgga	tgcgctggag	ctcgtcaaag	180
ccactcgtgt	atttttcaca	ggcagcctcg	tccgacgcgt	cggggcagtt	gggggtgtct	240
tcacactcca	ggaaactgtc	natgcagcag	ccattgctgc	agcggaaactg	ggtgggctga	300
cangtgccag	agcacactgg	atggcgccct	tccatgmnan	gggccctgng	ggaaagtccc	360
tganccccan	anctgcctct	caaangcccc	accttgacac	ccccgacagg	ctagaatgga	420
atcttcttcc	cgaaggttag	ttnttcttgt	tgcccaancc	anccccntaa	acaaactctt	480
gcanatctgc	tccgnggggg	tcntantacc	ancgtgggaa	aagaacccca	ggcngcgaac	540
caancttggt	tggatnccga	gcnataatct	nctnttctgc	ttggtggaca	gcaccantna	600
ctgtnnanct	ttagncntg	gtcctcntgg	gttgnncttg	aacctaactn	ccnntcaact	660
gggacaagg	aantngccnt	cctttnaatt	cccnancntn	ccccctgggt	tggggttttt	720
cncnctcta	ccccagaaan	nccgtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacaaccctn	ccccacccac	gggttcngnt	ggttng			816

<210> 15

<211> 783

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(783)

<223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacaacccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgctactgc	ggggtgacac	ggatgtcagg	gtagagagga	120
aagacccaaa	ccaggtggaa	ctgtggggac	tcaaggaang	cacctacctg	ttccagctga	180
cagtgactag	ctcagaccac	ccagaggaca	cggccaacgt	cacagtcact	gtgctgtcca	240
ccaagcagac	agaagactac	tgcctcgcat	ccaacaangt	gggtcgctgc	cggggctctt	300
tcccacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttcgtt	tatggaggct	360


```

gcttgggcaa caagaacaac taccttcggg aagaagagtg cattctancc tgtcnggggtg 420
tgcaaggtgg gcctttgana ngcanctctg gggctcangc gactttcccc cagggcccct 480
ccatggaaag gcgccatcca ntgttctctg gcacctgtca gcccacccag ttccgctgca 540
ncaatggctg ctgcatcnac antttcctng aattgtgaca acacccccca ntgcccccaa 600
ccctcccaac aaagcttccc tgttnaaaaa tacnccantt ggcttttnac aaacncccg 660
cncctcentt tccccnntn aacaaagggc nctngcnttt gaactgccc n aaccnnggaa 720
tctnccnngg aaaaantncc cccctggtt cctnnaance cctccncaaa anctncccc 780
ccc 783

```

<210> 16

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 16

```

gccccaatte cagctgccac accacccacg gtgactgcat tagttcggat gtcatacaaa 60
agctgattga agcaaccctc tacttttttg tctgagcct tttgcttggg gcaggtttca 120
ttggtgtgtg tggtagcgtt gtcattgcaa cagaatgggg gaaaggcact gttctctttg 180
aagtaggggtg agtcctcaaa atccgtatag ttggtgaagc cacagcactt gagcccttct 240
atggtgggtg tccacacttg agtgaagtct tccctgggaac cataatcttt cttgatggca 300
ggcactacca gcaacgtcag gaagtgtcga gccattgtgg tgtacaccaa ggcgaccaca 360
gcagctgca cctcagcaat gaagatgagg aggaggatga agaagaacgt cncgagggca 420
cacttgctct ccgtcttagc accatagcag cccangaaac caagagcaaa gaccacaacg 480
ccnctgctga atgaaagaaa ntacccacgt tgacaaactg catggccact ggacgacagt 540
tggcccgaan atcttcagaa aagggatgcc ccatcgattg aacaccana tgcccactgc 600
cnaaggggt gcnccnccn gaaagaatga gccattgaag aaggatctc ntggtcttaa 660
tgaactgaaa cntgcatgg tggccctgt tcaaggctct tggcagtga ttctganaaa 720
aaggaacngc ntnagcccc ccaaangana aaacaccccc ggggtgttgc ctgaattggc 780
ggccaaggan ccctgccc n g 801

```

<210> 17

<211> 740

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(740)

<223> n = A,T,C or G

<400> 17

```

gtgagagcca ggcgtccctc tgctgccc ctcagtggca acacccggga gctgttttgt 60
cctttgtgga gcctcagcag ttcctcttt cagaactcac tgccaagagc cctgaacagg 120
agccaccatg cagtgttca gttcattaa gaccatgatg atcctcttca atttgtcat 180
ctttctgtgt ggtgcagccc tgttggcagt gggcatctgg gtgtcaatcg atggggcatc 240
ctttctgaag atcttcgggc cactgtcgtc cagtgccatg cagtttgtca acgtgggcta 300
cttctctatc gcagccggcg ttgtggctct tctcttggg ttcctgggct gctatgggtg 360
taagacggag agcaagtgtg cctcgtgac gttcttcttc atcctcctcc tcatcttcat 420
tgctgaagtt gcagctgctg tggtcgcctt ggtgtacacc acaatggctg aaccattcct 480
gacgttgctg gtantgctg ccatcaanaa agattatggg ttcccaggaa aaattcactc 540
aantntggaa caccnccatg aaaagggtc caatttctgn tggcttcccc aactataccg 600
gaattttgaa agantcnccc tacttccaaa aaaaaanant tgcctttncc ccnttctgt 660
tgcaatgaaa acntccaan acngccaatn aaaacctgcc cnnncaaaaa ggntcncaaa 720

```

caaaaaaant nnaagggttn

740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(802)
 <223> n = A,T,C or G

<400> 18
 ccgctgggttg cgctgggtcca gngnagccac gaagcacgtc agcatacaca gcctcaatca 60
 caaggtcttc cagctgccgc acattacgca gggcaagagc ctccagcaac actgcatatg 120
 ggatacactt tacttttagca gccagggtga caactgagag gtgtcgaagc ttattcttct 180
 gagcctctgt tagtggagga agattccggg cttcagctaa gtagtcagcg tatgtcccat 240
 aagcaaacac tgtgagcagc cggaaggtag aggcaaagtc actctcagcc agctctctaa 300
 cattgggcat gtccagcagt tctccaaaca cgtagacacc agnggcctcc agcacctgat 360
 ggatgagtgt ggccagcgtt gcccccttgg ccgacttggc taggagcaga aattgctcct 420
 ggttctgccc tgtcaccttc acttcgcac tcatcactgc actgagtgtg ggggacttgg 480
 gctcaggatg tccagagacg tggttccgcc cctcncetta atgacaccgn ccanncaacc 540
 gtcggctccc gccgantgng ttcgctcgtnc ctgggtcagg gtctgtgtgc cncacttgc 600
 aancctcgtc nggcccatgg aattcaccnc accggaactn gtangatcca ctnttctat 660
 aaccggncgc caccgcnmt ggaactccac tcttnttnc tttacttgag ggttaaggtc 720
 acccttnncc ttaccttggg ccaaaccntn cntgtgtcg anatngtnaa tcnggncna 780
 tnccanccnc atangaagcc ng 802

<210> 19
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(731)
 <223> n = A,T,C or G

<400> 19
 cnaagcttcc aggtnacggg ccgcnaancc tgaccnagg tancanaang cagnncgagg 60
 gagccacccg tcacngggng gngtctttat nggagggggc ggagccacat cnetggacnt 120
 cntgacccca actcccncc ncnantgca gtgatgagtg cagaactgaa ggtnacgtgg 180
 caggaaccaa gancaaannc tgcctcnntc caagtcggcn nagggggcgg ggctggccac 240
 gencatccnt cnagtgtgn aaagcccnnt cctgtctact tgtttggaga acngcnnga 300
 catgcccagn gttanataac nggcnagag tnannttgcc tctcccttcc ggctgcgcan 360
 cgngtntgct tagnggacat aacctgacta cttaactgaa ccnngaate tnccnccct 420
 ccactaagct cagaacaaaa aacttcgaca ccactcantt gtcacctgnc tgcctcaagta 480
 aagtgtaccc catncccaat gtntgctnga ngctctgncc tgcnttangt tgggtcctgg 540
 gaagacctat caattnaagc tatgtttctg actgcctctt gctccctgna acaancnacc 600
 cnncnntcca agggggggnc ggcccccaat ccccccaacc ntnaattnan tttancccn 660
 ccccnnggcc cggcctttta cnanctenn nnaacnggna aaacennngc tttncccaac 720
 nnaatccncc t 731

<210> 20
 <211> 754
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(754)

<223> n = A,T,C or G

<400> 20

tttttttttt	tttttttttt	taaaaacccc	ctccattnaa	tgnaaacttc	cgaaattgtc	60
caaccccctc	ntccaaatnn	ccntttccgg	gnngggggtc	caaacccean	ttanntttgg	120
annttaaatt	aaatnttnt	tgngggnna	anccnaatgt	nangaaagt	naaccanta	180
tnancttnaa	tncttgga	ccngtngnt	ccaaaaatnt	ttaaccctta	antccctccg	240
aatngttna	nggaaaaccc	aanntctcnt	aaggttggtt	gaaggntnaa	tnaaaanccc	300
nnccaattgt	tttngccac	gcctgaatta	attggnttcc	gntgttttcc	nttaaaanaa	360
ggnnancccc	ggttantnaa	tccccccnnc	cccaattata	ccganttttt	ttngaattgg	420
gancccnccg	gaattaacgg	ggnnnnntccc	tnntgggggg	cnggnncccc	ccccntccgg	480
ggttngggnc	aggncnnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccaggntgag	nntnggggtt	necccccccc	cangggccct	ctcgnaag	tggggtttgg	600
ggggcctggg	atttttttcc	ccctnttnc	tcccccccc	ccnggganag	aggttngngt	660
tttgntcnnc	ggccccnccn	aaganttttn	ccganttnan	ttaaatccnt	gcctnggcga	720
agtcnttgn	agggntaaan	ggccccctnn	cggg			754

<210> 21

<211> 755

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(755)

<223> n = A,T,C or G

<400> 21

atcancccat	gacccnaac	nggggaccnc	tcanceggnc	nnncnaccnc	cgccnatca	60
ngtnagnnc	actncnttn	natcacnccc	cnccnactac	gcccncnanc	cnacgcnta	120
nncanatncc	actganngcg	cgangtngan	ngagaaanct	nataccanag	ncaccanacn	180
ccagctgtcc	nanaangcct	nnnatacngg	nnnateccat	ntgnancctc	cnaagtattn	240
nncnncan	gattttcctn	ancegattac	ccntncccc	tanccctcc	cccccaacna	300
cgaaggcnct	ggncnnaagg	nngcgncc	ccgctagntc	cccncaagt	cnncncccta	360
aactcanccn	nattacnccg	ttcntgagta	tcactccccg	aatctcacc	tactcaactc	420
aaaaanaten	gatacaaaat	aatncaagcc	tgnttatnac	actntgactg	ggtctctatt	480
ttagnngtcc	ntnaanctc	ctaatacttc	cagctcncct	tcnccaattt	ccnaanggct	540
ctttcngaca	gcatnttttg	gttcccnntt	gggttcttan	ngaattgcc	ttcntngaac	600
gggctcntct	tttccctcgg	ttancctgg	ttcnncggc	cagttattat	ttccntttt	660
aaattcntnc	cntttanttt	tggcnttcna	aacccccggc	cttgaaaacg	gcgccctgg	720
aaaaggttgt	tttganaaaa	ttttgtttt	gttcc			755

<210> 22

<211> 849

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(849)

<223> n = A,T,C or G

<400> 22

tttttttttt	tttttangtg	tngtcgtgca	ggtagaggct	tactacaant	gtgaanacgt	60
acgtnggan	taangcgacc	cgantttctag	gannccct	aaaatcanac	tgtgaagatn	120

atcctgnnna	cggaanggtc	accggnggat	nttgetaggg	tgneenctec	cannnchtn	180
cataacteng	nggeectgcc	caccaccttc	ggcggeccng	ngncegggcc	cgggtcattn	240
gnnttaacn	cactnngcna	ncggtttccn	ccccennng	accngggcga	tccggggtn	300
tetgtcttc	cctgnagnn	anaaantggg	ccncggncce	ctttaccct	nnacaagcca	360
cngccteta	ncnengccc	ccccccant	nnnggggaact	gccnannget	cgttntctng	420
nnaccccnnn	gggtncctcg	gttgctcgant	cnaccgnang	ccanggattc	cnaaggaagg	480
tgcgttnttg	gcccetaccc	ttcgctncgg	nncacccttc	ccgacnanga	nccgctcccg	540
cnennengng	cctncctcg	caacacccgc	netentengt	ncggnnnccc	ccccaccgc	600
ncctcnenc	ngnecgnan	ctcncncc	gtctcannca	ccaccccgcc	ccgccaggcc	660
ntcanccacn	ggngacnng	nagcncntc	gncgcgcgn	gcgnccct	cgcncngaa	720
ctnctcngg	ccantnncg	tcaancnna	cnaaacgcg	ctgcgcggcc	cgnagcgncc	780
ncctcncga	gtcctcccg	cttcnacc	angnttccn	cgaggacacn	nnaccccgcc	840
nncangcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

gcgcaaaacta	tacttcgtc	gnaactcgtgc	gcctcgtcnc	tcttttctc	cgcaaccatg	60
tctgacnanc	ccgattnggc	ngatatacn	aagntcganc	agtccaaact	gantaacaca	120
cacacnncn	aganaaatcc	netgccttc	anagtana	attgaacnng	agaaccangc	180
nggcgaatcg	taatnaggcg	tgcgcgcga	atntgtcncc	gtttattntn	ccagctcnc	240
ctnccnacc	tacntcttcn	nagctgtcnn	acccctngtn	cgnaccccc	naggtcgga	300
tgcggtttnn	nttgaccgng	cnccccctc	ccccctcat	nacgancnc	ccgcaccacc	360
nanngcncg	nccecgnet	cttcgcnc	ctgtctntn	ccccgtngc	ctggcncngn	420
accgcattga	ccctcgcnn	ctncnngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnngcg	tctgcncgc	gttcttccn	nnncttcca	ccatcttct	taanggtct	540
ccnccctc	tcnnncacn	cctgggacgc	tntcctntgc	cccccttnac	tccccctt	600
cgnctgncc	cgnccccacc	ntcatttnca	nacgntcttc	aqaannncc	ggntmctcc	660
cnancngn	gtcancnag	ggaagggngg	ggnnccnntg	nttgacgttg	ngngangtc	720
cgaanantcc	tcnccntcan	cctaccct	cgggcgnnet	ctcngttnc	aacttancaa	780
ntctcccccg	ngngcncntc	tcagcctcnc	cnccccnct	ctctgcantg	tctctgtc	840
tnaccnntac	gantnttcgn	cncctcttt	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(815)

<223> n = A,T,C or G

<400> 24

gcatgcaagc	ttgagtattc	tatagngtca	cctaaatanc	ttggcntaat	catggtcnta	60
netgncttcc	tgtgtcaaat	gtatacna	tanatatgaa	tctnatntga	caaganngta	120
tctnctatta	gtaacaantg	tnntgtccat	cctgtcngan	canattccca	tnnattnngn	180
cgcattcn	gencantatn	taatngggaa	ntcnnntnnn	ncaccnncat	ctatctncc	240
gnccttgac	tggnagagat	ggatnanttc	tnntntgacc	nacatgttca	tcttggtatn	300
aananceccc	cgcngnccac	cggtnngng	cnagcnnct	ccaagacctc	ctgtggaggt	360

aacctgcgtc	aganncatca	aacntgggaa	accgcgnccc	angtnnaagt	ngnnncanan	420
gateccgtcc	aggnttnacc	atcccttcnc	agcgcceccct	ttngtgcctt	anagngnagc	480
gtgtccnanc	cncctcaacat	ganacgcgcc	agnccanccg	caattnggca	caatgtcgnc	540
gaaccccccta	gggggantna	tncaaancce	caggattgtc	cnencangaa	atcccnanc	600
cccnccctac	ccncttttg	gacngtgacc	aantcccgga	gtncacgtcc	ggcengnctc	660
ccccaccggt	nncntgggg	gggtgaanct	cngnntcanc	cngncgaggn	ntcgnaagga	720
accggnccctn	ggncgaanng	ancnntcnga	agngccnct	cgtataacce	ccctcncca	780
nccnacngnt	agntccccc	cngggtnccg	aangg			815

<210> 25

<211> 775

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (775)

<223> n = A,T,C or G

<400> 25

ccgagatgtc	tcgctccgtg	gccttagctg	tgctcgcgct	actctctctt	tctggcctgg	60
aggctatcca	gcgtactcca	aagattcagg	tttactcacg	tcateccagca	gagaatggaa	120
agtcaaattt	cctgaattgc	tatgtgtctg	ggtttcatcc	atccgacatt	gaanttact	180
tactgaagaa	tgganagaga	attgaaaaag	tggagcattc	agacttgtct	ttcagcaagg	240
actggtcttt	ctatctcntg	tactacactg	aattcacccc	cactgaaaaa	gatgagtatg	300
cctgccgtgt	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gatcgagaca	360
tgtaagcagn	cnncatggaa	gtttgaagat	gccgcatttg	gattggatga	attccaaatt	420
ctgcttgctt	gcnttttaat	antgatatgc	ntatacaccc	taccctttat	gnccccaaat	480
tgtaggggtt	acatnantgt	tcnctnngga	catgatcttc	ctttataant	cnccnttcg	540
aattgccgt	cncccngttt	ngaattgttc	cnnaaccacg	gttggtccc	ccaggtcncc	600
tcttacggaa	gggcctgggc	cnctttncaa	ggttggggga	accnaaaatt	tcnctntg	660
cncccncca	cnntcttgng	nncncanttt	ggaacccttc	cnattccctt	tggcctcnna	720
nccttnncta	anaaaacttn	aaancgtngc	naaanntttt	acttcccccc	ttacc	775

<210> 26

<211> 820

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (820)

<223> n = A,T,C or G

<400> 26

anattantac	agtgtaatct	tttcccagag	gtgtgtanag	ggaacggggc	ctagaggcat	60
cccanagata	ncttatanca	acagtgtttt	gaccaagagc	tgctgggcac	atttcttgca	120
gaaaagggtg	cgggtcccat	cactcctcct	ctcccatagc	catcccagag	gggtgagtatg	180
ccatcangcc	ttcgggtggga	gggagtcang	gaaacaacan	accacagagc	anacagacca	240
ntgatgacca	tgggcgggag	cgagcctctt	ccctgnaccg	gggtggcana	nganagccta	300
nctgaggggt	cacactataa	acgttaacga	cnagatnan	cacctgtctc	aagtgcaccc	360
ttcctacctg	acnaccagn	accnnaact	gcngcctggg	gacagcctg	ggancagcta	420
acnagcact	cacctgcccc	cccattggcg	tnccntccc	tggtcctgnc	aagggaagct	480
ccctgttgga	attncgggga	naccaaggga	nccectcct	ccanctgtga	aggaaaaann	540
gatggaattt	tncccttcctg	gccnntcccc	tcttcttcta	cacgccccct	nntactcttc	600
tccctctntt	ntcctgnenc	acttttnacc	ccnnnatttc	ccttnattga	tcggannctn	660
ganattccac	tnnccctnc	cntcnatng	naanacnaaa	nactntctna	ccnnggggat	720
gggnnccctg	ntcactctct	cttttctnct	accnccnntt	ctttgectct	ccttngatca	780

tccaacntc gntggcntn cccccennn tcttttcccc

820

<210> 27

<211> 818

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(818)

<223> n = A,T,C or G

<400> 27

tctgggtgat	ggcctcttcc	tctcagga	cctctgactg	ctctgggcca	aagaatctct	60
tgtttcttct	ccgagcccca	ggcagcggg	attcagccct	gccccacctg	attctgatga	120
ctgcggatgc	tgtgacggac	ccaaggggca	aatagggtcc	cagggtccag	ggaggggccc	180
ctgctgagca	cttcgcccc	tcacctgcc	cagccctgc	catgagctct	gggctgggtc	240
tccgctcca	gggttctgct	cttccangca	ngccancaag	tggcgtggg	ccacactggc	300
ttcttctgc	ccctccctg	gctctganc	tctgtcttcc	tgctctgtgc	angcnccttg	360
gatctcagtt	tccctcctc	anngaactct	gtttctgann	tcttcantta	actntgantt	420
tatnaccnan	tggnetgtnc	tgctnnactt	taatgggccc	gaccggctaa	tccctccctc	480
nctcccttcc	anttcnnna	accngcttnc	cntctctcc	ccntancccg	ccngggaanc	540
ctcctttgcc	ctnaccangg	gcnnnaccg	ccctnnctn	ggggggcng	gtnnctnenc	600
ctgntnnccc	cnetencnnt	tnectcgtec	cnnncnccn	nngcannttc	nngtcccn	660
tnnctcttcn	ngtntcgnaa	ngntcnctn	tnnnngncn	ngntnntn	tccctctcnc	720
cnnntgnang	tnnttnnnnc	ncngnncccc	nnnnnnnnn	nggnntnnn	tctnncngc	780
ccnncccc	ngnattaagg	cctccnntct	ccggccnc			818

<210> 28

<211> 731

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(731)

<223> n = A,T,C or G

<400> 28

aggaagggcg	gagggatatt	gtangggatt	gagggatagg	agnataangg	gggaggtgtg	60
tcccaacatg	anggtgnngt	tctcttttga	angaggggtg	ngtttttann	ccnggtgggt	120
gattnaaccc	cattgtatgg	agnnaaagg	tttnagggat	ttttcggtc	ttatcagtat	180
ntanattcct	gtnaatcgga	aatnatntt	tcnncnggaa	aatnttgctc	ccatccgnaa	240
attnctcccg	ggtagtgcatt	nttnggggg	cngccangtt	tcccaggctg	ctanaatcgt	300
actaaagntt	naagtgggan	tncaaatgaa	aacctnncc	agagnatccn	tacccgactg	360
tnnnttncct	tcgcccctng	actctgcnn	agcccaatac	ccnngngnat	gtcncccn	420
nnngcgnnc	tgaaannnn	tcgnggctnn	gancatcang	gggtttcgca	tcaaaagcnn	480
cgtttcncat	naaggcactt	tngcctcatc	caaccnctng	ccctcnncca	tttngccgtc	540
nggttcncct	acgctnntng	cncctnnntn	ganattttnc	ccgcctnggg	naancctcct	600
gnaatgggta	gggncttntc	tttnaccnn	ngggtntact	aatcnnctnc	acgcntnctt	660
tctcnacccc	cccccttttt	caatcccan	ggcnaatggg	gtctccccnn	cgangggggg	720
nnnccanne	c					731

<210> 29

<211> 822

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (822)

<223> n = A,T,C or G

<400> 29

actagtccag	tgtgggtggaa	ttccattgtg	ttggggncnc	ttctatgant	antnttagat	60
cgctcanacc	tcacancctc	ccnacnango	ctataangaa	nannaataga	netgtncnnt	120
atntntacnc	tcatanncct	cnnnaccac	tcctctctaa	ccctactgt	gcctatngcn	180
tnnctantct	ntgccgcctn	cnanccaccn	gtggggcnc	cncnngnatt	ctcnatctcc	240
tenccatntn	gcctananta	ngtncatacc	ctataacctac	nccaatgcta	nnnctaancn	300
tccatnantt	annntaacta	ccactgacnt	ngactttcnc	atnanctcct	aatittgaatc	360
tactctgact	cccacngcct	annnattagc	ancntcccc	nacnatntct	caaccaaate	420
ntcaacaacc	tatctanctg	ttcnccaacc	nttncctccg	atccccnnac	aacccccctc	480
ccaaataccc	nccacctgac	ncctaaccen	caccateccg	gcaagccnan	ggncatttan	540
ccactggaat	cacnatngga	naaaaaaac	ccnaactctc	tancncnnat	ctccctaana	600
aatnctcctn	naatttactn	ncantnccat	caancccaen	tgaaacnaa	ccctgtttt	660
tanatccctt	ctttcgaaaa	ccnacccttt	annmcccaac	ctttngggcc	ccccnctnc	720
ccnaatgaag	gncncccaat	cnangaaacg	ncnttgaaaa	ancnaggcna	anannntccg	780
canatccctat	cccttanttn	ggggncctt	nccnngggcc	cc		822

<210> 30

<211> 787

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (787)

<223> n = A,T,C or G

<400> 30

cgggcgccctg	ctctggcaca	tgcctcctga	atggcatcaa	aagtgatgga	ctgcccattg	60
ctagagaaga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctcccctt	120
gtctgcagga	tttgatgtct	gaagtcgtgg	agtgtggctt	ggagctcctc	atctacatna	180
gctggaagcc	ctggagggcc	tctctcgcca	gcctccccct	tctctccacg	ctctccangg	240
acaccagggg	ctccaggcag	cccattatct	ccagnangac	atgggtgttc	tccacgcgga	300
cccatggggc	ctgnaaggcc	agggctcctt	ttgacaccat	ctctcccgtc	ctgcctggca	360
ggccgtggga	tccactantt	ctanaacggg	cgccaccncg	gtgggagctc	cagcttttgt	420
tccnttaaat	gaaggttaat	tgcncgcttg	gcgtaatcat	nggtcanaac	tntttcctgt	480
gtgaaattgt	ttntccccct	ncnatccnc	ncnacatacn	aacccggaan	cataaagtgt	540
taaagcctgg	gggtngcctn	ngaataaac	tnaactcaat	taattgcgtt	ggctcatggc	600
ccgttttccn	ttcnggaaaa	ctgtcntccc	ctgcnttntt	gaatcggcca	ccccccnggg	660
aaaagcggtt	tgcnttttng	ggggntcctt	ccntctcccc	cctcnctaan	ccctnccct	720
cggtcgttnc	nggtngcggg	gaanggnat	nnctccnc	naagggggng	agnnngntat	780
ccccaaa						787

<210> 31

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (799)

<223> n = A,T,C or G

<400> 31

tttttttttt	tttttttggc	gatgctactg	tttaattgca	ggaggtggg	gtgtgtgtac	60
catgtaccag	ggctattaga	agcaagaagg	aaggaggagg	ggcagagcgc	cctgctgagc	120
aacaaaggac	tctctcagcc	ttctctgtct	gtctcttggc	gcaggcacat	ggggaggcct	180
cccgagggt	gggggccacc	agtcagggg	tgggagcact	acanggggtg	ggagtgggtg	240
gtggctggt	cnaatggcct	gncacanatc	cctacgattc	ttgacacctg	gatttcacca	300
ggggaccttc	tgttctccca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagcaca	ggtgtccnat	ttnggctggg	acttggtaca	420
tatggttccg	gcccacctct	ccntcnaaan	aagtaattca	ccccccccc	ccntctnttg	480
cctgggcect	taantaccca	caccggaact	canttantta	ttcatcttng	gntgggcttg	540
ntnatcnecn	cctgaangcg	ccaagttgaa	aggccacgcc	gtncccnctc	cccatagnan	600
nttttntcnt	canctaagtc	cccccnnggc	aacnatccaa	tcccccccn	tgggggcccc	660
agcccanggc	ccccgnctcg	ggnnncnngn	cncgnantcc	ccaggntctc	ccantcngnc	720
ccnnngcncc	cccgacgca	gaacanaagg	ntngagccnc	cgcannnnnn	nggtnnncnac	780
ctcgcccccc	ccnncgng					799

<210> 32

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (789)

<223> n = A, T, C or G

<400> 32

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttncnag	ggcagggtta	ttgacaacct	cncgggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcgggc	gcgggcgggc	ccctacctgc	ggtaccaa	ntgcagcctc	180
cgctcccget	tgatnttct	ctgcagctgc	aggatgccnt	aaaacagggc	ctcgcccntn	240
ggtgggcacc	ctgggatttn	aatttccacg	ggcacaatgc	ggtcgcancc	cctcaccacc	300
nattaggaat	agtggtnnta	ccnccnccg	ttggencact	ccccntggaa	accacttntc	360
gcggctccgg	catctgggtc	taaaccttgc	aaacnctggg	gcctcttttt	tggttantnt	420
nccngccaca	atcatnactc	agactggcnc	gggctggccc	caaaaaan	ccccaaaacc	480
ggncatgtc	ttnnccgggt	tgctgcnatn	tncatcacct	cccgggcnca	ncaggncaac	540
ccaaaagtgc	ttngggcccn	caaaaaanct	ccggggggnc	ccagtttcaa	caaagtcac	600
ccccttggcc	cccaaactct	cccccgntt	nctgggtttg	ggaacccacg	cctctnnctt	660
tggngggcaa	gntggntccc	ccttcggggc	cccgggtggg	ccnctctaa	ngaaaacncc	720
ntcctnnnca	ccatcccccc	nngnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccncc						799

<210> 33

<211> 793

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (793)

<223> n = A, T, C or G

<400> 33

gacagaacat	gttggatggt	ggagcacctt	tctatacgac	ttacaggaca	gcagatgggg	60
aattcatggc	tggtggagca	atanaacccc	agttctacga	gctgctgac	aaaggacttg	120
gactaaagtc	tgatgaactt	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaagtttgc	agatgtat	gcaaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttggtcat	catgatcaca	300
acaangaacg	gggctcggtt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360

ctctgctggtt	aaacacccca	gccatccctt	ctttcaaaaag	ggatccacta	cttctagagc	420
ggncgccacc	gcggtggagc	tccagctttt	gttcccttta	gtgagggtta	attgcgcgct	480
tggcgtaatc	atggtcatan	ctgtttcctg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaatTTT	aaagcctggg	ggtngectaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcactg	cccgttttcc	agtcgggaaa	acctgtcctt	660
gccagctgcc	nttaatgaat	cnggccaccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgcncctccc	gctttctcgc	ttcctgaant	ccttcccccc	ggtctttcgg	cttgccgcna	780
acggtatcna	cct					793

<210> 34

<211> 756

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (756)

<223> n = A,T,C or G

<400> 34

gccgcgaccg	gcatgtacga	gcaactcaag	ggcgagtggg	accgtaaaaag	ccccaatctt	60
ancaagtgcg	gggaanagct	gggtcgactc	aagctagttc	ttctggagct	caacttcttg	120
ccaaccacag	ggaccaagct	gaccaaacag	cagctaattc	tggcccgtga	catactggag	180
atcggggccc	aatggagcat	cctacgcaan	gacatcccct	ccttcgagcg	ctacatggcc	240
cagctcaaat	gctactactt	tgattacaan	gagcagctcc	ccgagtcagc	ctatatgcac	300
cagctcttgg	gcctcaacct	cctcttctctg	ctgtcccaga	accgggtggc	tgantnccac	360
acgganttgg	ancggctgcc	tgcccaanga	catacanacc	aatgtctaca	tcnaccacca	420
gtgtcctgga	gcaatactga	tgganggcag	ctaccncaaa	gtnttctctg	ccnagggtaa	480
catccccgcg	cgagagctac	accttcttca	ttgacatcct	gctcgacact	atcagggatg	540
aaaatcgcn	ggttgctcca	gaaaggctnc	aanaanatcc	ttttcnctga	aggcccccg	600
atnncntagt	nctagaatcg	gcccgccatc	gcggtgganc	ctccaacctt	tcgttnccct	660
ttactgaggg	ttnattgccg	cccttgccgt	tatcatggtc	acnccngttn	cctgtgttga	720
aattnttaac	ccccccacaat	tccacgccna	cattn			756

<210> 35

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (834)

<223> n = A,T,C or G

<400> 35

ggggatctct	anatenacct	gnatgcatgg	ttgtcggtgt	ggtcgctgtc	gatgaanatg	60
aacaggatct	tgcccttgaa	gctctcggtc	gctgtnttta	agttgctcag	tctgccgtca	120
tagtcagaca	cncctctggg	caaaaaacan	caggatntga	gtcttgattt	cacctccaat	180
aatcttcngg	gctgtctgct	cgggtgaactc	gatgacnang	ggcagctggg	tgtgtntgat	240
aaantccanc	angttctcct	tggtgacctc	cccttcaaag	ttgttccggc	cttcatcaaa	300
cttctnnaan	angannance	canctttgtc	gagctggnat	ttgganaaca	cgtcactgtt	360
ggaaactgat	cccaaattgg	atgtcatcca	tcgcctctgc	tgccctgcaa	aaacttgctt	420
ggcncaaate	cgactcccn	tccttgaaag	aagccnatca	cacccccctc	cctggactcc	480
nncaangact	ctnccgctnc	cccntccnng	cagggttggg	ggcannccgg	gcccntgcgc	540
ttcttcagcc	agttcacnat	nttcacacgc	ccctctgcca	gctgtnttat	tccttggggg	600
ggaanccgtc	tctcccttcc	tgaannaact	ttgaccgtng	gaatagccgc	gcntcncnt	660
acntnctggg	cggggttcaa	antccctccn	ttgncnntcn	cctcgggcca	ttctggattt	720
nccnaacttt	ttcttccccc	cncnccnccg	ngtttggntt	tttcatnggg	ccccaaactc	780

gctnttggcc antccctgg gggcntntan cncctctnt ggteccntng ggcc

834

<210> 36
 <211> 814
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(814)
 <223> n = A,T,C or G

<400> 36
 cggnccgttt cngccgcgc cccgtttcca tgacnaaggc tcccttcang ttaaatacnn 60
 cctagnaaac attaatgggt tgetctacta atacatcata cnaaccagta agcctgccc 120
 naacgccaac tcaggccatt cctaccaaag gaagaaaggc tggctctccc acccctgta 180
 ggaaaggcct gccttgtaag acaccacaat ncggctgaat ctnaagtctt gtgttttact 240
 aatggaaaaa aaaaataaac aanaggtttt gttctcatgg ctgcccaccg cagcctggca 300
 ctaaaacanc ccagcgctca cttctgcttg ganaaatatt ctttgctctt ttggacatca 360
 ggcttgatgg tatcactgcc acntttccac ccagctgggc ncccttcccc catntttgtc 420
 antganctgg aaggcctgaa ncttagtctc caaaagtctc ngcccacaag accggccacc 480
 agggggangtc ntttncagtg gatctgccaa anantaccn tatcatcnnt gaataaaaag 540
 gcccctgaac ganatgcttc cancanctt taagacccat aatcctngaa ccatgggtgcc 600
 ctcccggtct gacncnaaag gaatgttctt gggteccant cctcctttg ttnccttacgt 660
 tgtnttggac cntgtctngn atnaccnaan tganatcccc ngaagcacc tncctctggc 720
 atttganttt cntaaattct ctgccctacn nctgaaagca cnattccctn ggcnccnaan 780
 ggngaactca agaaggtctn ngaaaaacca cncn 814

<210> 37
 <211> 760
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(760)
 <223> n = A,T,C or G

<400> 37
 gcatgctgct cttcctcaaa gttgttcttg ttgccataac aaccaccata ggtaaagcgg 60
 gcgcagtgtt cgtgaaggg gttgtagtac cagcgcggga tgetctcctt gcagagtcct 120
 gtgtctggca ggtccacgca atgcccttg tcaactggga aatggatgag ctggagctcg 180
 tcnaanccac tcgtgtattt ttcacangca gcctctccg aagcntccgg gcagttgggg 240
 gtgtcgtcac actccactaa actgtcgatn cancagccca ttgctgcagc ggaactgggt 300
 gggctgacag gtgccagaac aactggatn ggcctttcca tggaaaggcc tgggggaaat 360
 cncctnancc caaactgct ctcaaaggcc accttgacac ccccgacagg ctagaaatgc 420
 actcttcttc ccaaaggtag ttgttcttg tgcccaagca nctccanca aaccaaanc 480
 ttgcaaaatc tgctccgtgg gggatcatnn taccanggtt ggggaaanaa acccgcnngn 540
 gancncctt gtttgaatgc naaggnaata atcctcctgt cttgcttggg tggaanagca 600
 caattgaact gttacnttg ggccnggttc cncnnggtg gtctgaaact aatcaccgtc 660
 actggaaaaa ggtangtgc ttccttgaat tcccaantt cccctngntt tgggtntttt 720
 ctcctctncc ctaaaaaatc tnttcccccc centanggcg 760

<210> 38
 <211> 724
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (724)

<223> n = A,T,C or G

<400> 38

tttttttttt	tttttttttt	tttttttttt	tttttaaaaa	ccccctccat	tgaatgaaaa	60
cttcnnaaat	tgtccaaccc	cctcncccaa	atnccattt	ccgggggggg	gttccaaacc	120
caaattaatt	ttgganttta	aattaaatnt	tnattngggg	aanaanccaa	atgtnaagaa	180
aatttaaccc	attatnaact	taaatnccn	gaaaccntg	gnttccaaaa	atttttaacc	240
cttaaatccc	tccgaaattg	ntaanggaaa	accaaattcn	cctaaggctn	tttgaagggt	300
ngattttaac	cccccttnant	tttttttnacc	cnngnctnaa	ntatttngnt	tccgggtgtt	360
tectnttaan	cntnggtaac	tcccgnataat	gaanmccct	aanccaatta	aaccgaattt	420
tttttgaatt	ggaaattccn	ngggaattna	ccgggggttt	tcccntttgg	gggccatncc	480
cccnctttcg	gggtttgggn	ntaggttgaa	tttttnnang	ncccaaaaaa	nccccaana	540
aaaaaactcc	caagnnttaa	ttngaantnc	ccccctccca	ggccttttgg	gaaaggnggg	600
ttnttggggg	ccngggantt	cnttcccccn	ttncncccc	ccccccnggt	aaanggttat	660
ngnntttggg	ttttgggccc	cttnanggac	cttccggatn	gaaattaaat	ccccgggncg	720
gccg						724

<210> 39

<211> 751

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (751)

<223> n = A,T,C or G

<400> 39

tttttttttt	tttttctttg	ctcacattta	atttttattt	tgattttttt	taatgctgca	60
caacacaata	tttatttcat	ttgtttcttt	tatttcattt	tatttgtttg	ctgctgctgt	120
tttattttatt	tttactgaaa	gtgagaggga	acttttgttg	ccttttttcc	tttttctgta	180
ggcgcctta	agctttctaa	atttggaaca	tctaagcaag	ctgaanggaa	aaggggggtt	240
cgcaaaatca	ctcgggggaa	nggaaagggt	gctttgttaa	tcatgcccta	tgggtgggtga	300
ttaactgctt	gtacaattac	ntttcacttt	taattaattg	tgetnaangc	tttaattana	360
cttgggggtt	ccctccccc	accaaccccn	ctgacaaaaa	gtgccngccc	tcaaatnatg	420
tccggcnnnt	cnttgaaaca	cacngcngaa	ngttctcatt	ntccccncnc	caggtnaaaa	480
tgaagggtta	ccatntttta	cncacctcc	acntggcnnn	gcctgaatcc	tcnaaaancn	540
ccctcaancn	aattnctnng	ccccggctnc	gcntnngtcc	cnccegggct	ccgggaantn	600
cacccccnga	anncnntnnc	naacnaaatt	cgaaaatat	tcccnctcnc	tcaattcccc	660
cnnagactnt	cctcnnncan	cncaattttc	ttttntcac	gaacncgnnc	cnnaaatagn	720
nnnnncctc	cncnngtcn	naatcnccan	c			751

<210> 40

<211> 753

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (753)

<223> n = A,T,C or G

<400> 40

gtggattttt	ctgtaagatc	aggtgttcct	ccctcgtagg	tttagaggaa	acaccctcat	60
agatgaaaac	ccccccgaga	cagcagcact	gcaactgcc	agcagccggg	gtaggagggg	120

cgccctatgc acagctgggc ccttgagaca gcagggttc gatgtcaggc tcgatgtcaa	180
tggtctggaa gcggcggtcg tacctgcgta ggggcacacc gtcagggcc accaggaact	240
tctcaaagtt ccaggcaacn tcgttgcgac acaccggaga ccagggtgatn agcttggggt	300
cggtcataa cgcgggtggc tcgtcgtgg gagctggcag ggctcccgcc aggaaggcna	360
ataaaaggtg cgcggcgca cgttcanct cgcacttctc naanaccatg angttggggt	420
cnaaccacc accannccgg acttcttga nggaattccc aaatctcttc gntcttgggc	480
ttctnctgat gccctanctg gttgccnngn atgccaanca nccccancc ccggggctct	540
aaanaccen cctctcntt tcatctgggt tnttntoccc ggacctgggt tctctcaag	600
gganccata tctcnaccan tactcacnt nccccccnt gnnaccancc cttctanngn	660
ttccncccg nctctggcc cntcaanan gcttncacna cctgggtctg cttcccccc	720
tnccctatct gnacccnncn ttgtctcan tnt	753

<210> 41

<211> 341

<212> DNA

<213> Homo sapien

<400> 41

actatatcca tcacaacaga catgcttcat cccatagact tcttgacata gcttcaaagt	60
agtgaaccca tcttgattt atatacatat atgttctcag tattttggga gcctttccac	120
ttctttaaac cttgttcatt atgaacactg aaaataggaa ttgtgaaga gttaaaaagt	180
tatagcttgt ttacgtagta agtttttgaa gtctacattc aatccagaca cttagttgag	240
tgtaaaactg tgatttttaa aaaatatcat ttgagaatat tctttcagag gtattttcat	300
tttactttt tgattaattg tgttttatat attagggtag t	341

<210> 42

<211> 101

<212> DNA

<213> Homo sapien

<400> 42

acttactgaa tttagttctg tgctcttctt tatttagtgt tgtatcataa atactttgat	60
gtttcaaaca ttctaaataa ataattttca gtggcttcat a	101

<210> 43

<211> 305

<212> DNA

<213> Homo sapien

<400> 43

acatctttgt tacagtctaa gatgtgttct taaatcacca ttccttctg gtctcacc	60
tccagggtgg tctcacactg taattagagc tattgaggag tctttacagc aaattaagat	120
tcagatgcct tgctaagtct agagttctag agttatgtt cagaaagtct aagaaaccca	180
cctcttgaga ggtcagtaaa gaggacttaa tatttcatat ctacaaaatg accacaggat	240
tgatacaga acgagagtta tcttgataa ctcagagctg agtacctgcc cggggggccgc	300
tcgaa	305

<210> 44

<211> 852

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (852)

<223> n = A,T,C or G

<400> 44

acataaatat	cagagaaaag	tagtctttga	aatattttacg	tccaggagtt	ctttgtttct	60
gattatttgg	tgtgtgtttt	ggtttgtgtc	caaagtattg	gcagcttcag	ttttcatttt	120
ctctccatcc	tccggcattc	ttcccaaatt	tatataccag	tcttcgtcca	tccacacgct	180
ccagaatttc	tctttttag	taatatctca	tagctcggct	gagcttttca	taggtcatgc	240
tgctgttggt	cttcttttta	ccccatagct	gagccactgc	ctctgatttc	aagaacctga	300
agacgccctc	agatcgggtc	tcccatttta	ttaatcctgg	gttcttgtct	gggttcaaga	360
ggatgtcgcg	gatgaattcc	cataagttag	tccctctcgg	gttgtgcttt	ttgggtgtggc	420
acttggcagg	ggggtcttgc	tcctttttca	tatcagggtga	ctctgcaaca	ggaagggtgac	480
tggtggttgt	catggagatc	tgagcccggc	agaaagtttt	gctgtccaac	aaatctactg	540
tgctaccata	gttgggtgtc	tataaatagt	tctngtcttt	ccagggtgtc	atgatggaag	600
gctcagtttg	ttcagtcctg	acaatgacat	tgtgtgtgga	ctggaacagg	tcactactgc	660
actggccgtt	ccacttcaga	tgctgcaagt	tgtgttagag	gagntgcccc	gccgtccctg	720
ccgcccggtt	gaactcctgc	aaactcatgc	tgcaaagggtg	ctcgccgttg	atgtcgaact	780
cntggaaagg	gatcaattg	gcattccagct	ggttggtgtc	caggagggtga	tggagccact	840
cccacacctg	gt					852

<210> 45
 <211> 234
 <212> DNA
 <213> Homo sapien

<400> 45	
acaacagacc	cttgctcgct aacgacctca tgctcatcaa gttggacgaa tccgtgtccg 60
agtctgacac	catccggagc atcagcattg ctctgcagtg ccctaccgcg ggaactctt 120
gcctcgtttc	tggctggggt ctgctggcga acggcagaat gcctaccgtg ctgcagtgcg 180
tgaacgtgtc	ggtggtgtct gaggaggtct gcagtaagct ctatgaccgc ctgt 234

<210> 46
 <211> 590
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (590)
 <223> n = A,T,C or G

<400> 46	
actttttatt	taaatgttta taaggcagat ctatgagaat gatagaaaac atgggtgtgta 60
atttgatagc	aatatttttg agattacaga gtttttagtaa ttaccaatta cacagttaaa 120
aagaagataa	tatattccaa gcanatacaa aatatctaata gaaagatcaa ggcaggaaaa 180
tgantataac	taattgacaa tggaaaaatca attttaatgt gaattgcaca ttatccttta 240
aaagctttca	aaanaaanaa ttattgcagt ctanttaatt caaacagtgt taaatgggat 300
caggataaan	aactgaaggg canaaagaat taattttcac ttcattgtaac ncacccanat 360
ttacaatggc	ttaaatgcan ggaaaaagca gtggaagtag ggaagtantc aaggctctttc 420
tggtctctaa	tctgccttac tctttgggtg tggtcttgat cctctggaga cagctgccag 480
ggctcctggt	atatccacaa tcccagcagc aagatgaagg gatgaaaaag gacacatgct 540
gccttccttt	gaggagactt catctcactg gccaacactc agtcacatgt 590

<210> 47
 <211> 774
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (774)
 <223> n = A,T,C or G

<400> 47
 acaagggggc ataatgaagg agtgggggana gatttttaaag aaggaaaaaa aacgaggccc 60
 tgaacagaat ttctctgnac aacggggcct caaaataatt ttcttgggga ggttcaagac 120
 gcttcactgc ttgaaactta aatggatgtg ggacanaatt ttctgtaatg accctgaggg 180
 cattacagac gggactctgg gaggaaggat aaacagaaag gggacaaagg ctaatcccaa 240
 aacatcaaag aaaggaaggt ggcgtcatac ctcccagcct acacagttct ccagggtctct 300
 cctcatccct ggaggacgac agtggaggaa caactgacca tgtcccaggg ctctgtgtg 360
 ctggctctctg gtcttcagcc cccagctctg gaagcccacc ctctgtgat cctgctgtggc 420
 ccacactcct tgaacacaca tccccagggt atattcctgg acatggctga acctcctatt 480
 cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccactcac cctccaaacc 540
 acggcatggg aagcctttct gacttgcttg attactccag catcttgga caatccctga 600
 ttccccactc cttagaggca agataggggt gttaagagta gggctggacc acttgagcc 660
 aggtgctgtg cttcaaattn tggctcattt acgagctatg ggaccttggg caagtnatct 720
 tcacttctat gggctcatt ttgttctacc tgcaaaatgg gggataataa tagt 774

<210> 48
 <211> 124
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(124)
 <223> n = A,T,C or G

<400> 48
 canaaattga aattttataa aaaggcattt ttctcttata tccataaaat gatataattt 60
 ttgcaantat anaaatgtgt cataaattat aatgttcctt aattacagct caacgcaact 120
 tgggt 124

<210> 49
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 49
 gccgatgcta ctattttatt gcaggaggtg ggggtgtttt tattattctc tcaacagctt 60
 tgtggctaca ggtggtgtct gactgcatna aaaantttt tacgggtgat tgcaaaaatt 120
 ttagggcacc catatcccaa gcantgt 147

<210> 50
 <211> 107
 <212> DNA
 <213> Homo sapien

<400> 50
 acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggcct gatatatgtc 60
 atggtttgag gttaggagga gttaggcata tgttttggga gaggggt 107

<210> 51
 <211> 204
 <212> DNA

<213> Homo sapien

<400> 51

gtcctaggaa gtctagggga cacacgactc tggggtcacg gggccgacac acttgcaagg	60
cgggaaggaa aggcagagaa gtgacaccgt cagggggaaa tgacagaaag gaaaatcaag	120
gccttgcaag gtcagaaagg ggactcaggg cttccaccac agccctgccc cacttgcca	180
cctccctttt gggaccagca atgt	204

<210> 52

<211> 491

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(491)

<223> n = A,T,C or G

<400> 52

acaaagataa catttatctt ataacaaaaa tttgatagtt ttaaaggtta gtattgtgta	60
gggtattttc caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaaca	120
ccatcagaca ggtttttaaa aaacaacata ttacaaaatt agacaatcat ccttaaaaaa	180
aaaacttctt gtatcaattt cttttgttca aaatgactga ctttaantatt tttaaatatt	240
tcanaaacac ttcttcaaaa attttcaana tggtagcttt canatgtnc ctcagtccca	300
atgttgctca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc	360
atgcaacagt gtcttttctt tnccttttct tttttttttt ttacaggcac agaaactcat	420
caattttatt tggataacaa agggctctcca aatttatattg aaaaataaat ccaagttaat	480
atcactcttg t	491

<210> 53

<211> 484

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(484)

<223> n = A,T,C or G

<400> 53

acataattta gcagggctaa ttaccataag atgctattta ttaanaggtn tatgatctga	60
gtattaacag ttgctgaagt ttggtatttt tatgcagcat tttctttttg ctttgataac	120
actacagaac ccttaaggac actgaaaatt agtaagtaaa gttcagaaac attagctgct	180
caatcaaata tctacataac actatagtaa ttaaaacggt aaaaaaaagt gttgaaatct	240
gcactagtat anaccgctcc tgtcaggata anactgcttt ggaacagaaa gggaaaaanc	300
agctttgant ttctttgtgc tgatangagg aaaggctgaa ttaccttggt gctctccct	360
aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttccncg	420
tancttgant ctgtgtattc caggancagg cggatggaat gggccagccc ncggatgttc	480
cant	484

<210> 54

<211> 151

<212> DNA

<213> Homo sapien

<400> 54

actaaacctc gtgcttggtga actocataca gaaaacgggt ccatccctga acacggctgg	60
ccactgggta tactgctgac aaccgcaaca aaaaaaacac aaatccttgg cactggctag	120

tctatgtcct ctcaagtgcc tttttgtttg t

151

<210> 55

<211> 91

<212> DNA

<213> Homo sapien

<400> 55

acctggcttg tctccgggtg gttcccggcg cccccacgg tccccagaac ggacactttc
gccctccagt ggatactcga gccaaagtgg t

60

91

<210> 56

<211> 133

<212> DNA

<213> Homo sapien

<400> 56

ggcggatgtg cggtgggttat atacaaatat gtcattttat gtaagggact tgagtatact
tggatttttg gtatctgtgg gttgggggga cgggccagga accaataccc catggatacc
aagggacaac tgt

60

120

133

<210> 57

<211> 147

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(147)

<223> n = A,T,C or G

<400> 57

actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggegc
gactggggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcc gacntgcana
tctcantggg ctggatncat gcagggt

60

120

147

<210> 58

<211> 198

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(198)

<223> n = A,T,C or G

<400> 58

acagggatat aggtttnaag ttattgtnat tgtaaaatac attgaatttt ctgtatactc
tgattacata catttatcct ttaaaaaaga tgtaaatcct aatttttatg ccacttatta
atttaccat gagttacctt gtaaatgaga agtcatgata gcactgaatt ttaactagtt
ttgacttcta agtttggt

60

120

180

198

<210> 59

<211> 330

<212> DNA

<213> Homo sapien

<400> 59

acaacaaatg ggttgtagg aagtcttatac agcaaaactg gtgatggcta ctgaaaagat 60
ccattgaaaa ttatcattaa tgattttaaa tgacaagtta tcaaaaactc actcaatttt 120
cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa 180
tacagtcaat aaatgacaaa gccagggcct acaggtgggt tccagacttt ccagaccag 240
cagaaggaat ctattttatac acatggatct ccgtctgtgc tcaaaaatacc taatgatatt 300
tttcgtcttt attggacttc tttgaagagt 330

<210> 60
<211> 175
<212> DNA
<213> Homo sapien

<400> 60
accgtgggtg ccttctacat tectgaaggc tecttcacca acatctgggt ctacttcggc 60
gtcgtgggtc ccttctctt catctctatc cagctgggtc tgcctatcga ctttgcgcac 120
tcttgaacc agcgtgggt gggcaaggcc gaggagtgcg attcccgtgc ctggt 175

<210> 61
<211> 154
<212> DNA
<213> Homo sapien

<400> 61
acccacttt tcttctgtg agcagtctgg acttctcact gctacatgat gagggtgagt 60
ggttggtgct cttcaacagt atcttccct ttcggatct gctgagccgg acagcagtgc 120
tggactgcac agcccgggg ctccacattg ctgt 154

<210> 62
<211> 30
<212> DNA
<213> Homo sapien

<400> 62
cgctcgagcc ctatagttag tegtattaga 30

<210> 63
<211> 89
<212> DNA
<213> Homo sapien

<400> 63
acaagtcatt tcagcaccct ttgctcttca aaactgacca tcttttatat ttaatgcttc 60
ctgtatgaat aaaaatgggt atgtcaagt 89

<210> 64
<211> 97
<212> DNA
<213> Homo sapien

<400> 64
accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa ggttctgcag 60
aatcagtga tccaggattg gtccttggat ctgggggt 97

<210> 65
<211> 377
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(377)

<223> n = A,T,C or G

<400> 65

acaacaanaa ntcccttctt taggcactg atggaaacct ggaacccct tttgatggca	60
gcattggcgtc ctaggccttg acacagcggc tgggggttgg gctntcccaa accgcacacc	120
ccaaccctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggt	180
tcggtcataa natgaaatcc caanggggac agaggtcagt agaggaagct caatgagaaa	240
ggtgctgttt gctcagccag aaaacagctg cctggcattc gccgctgaac tatgaaccg	300
tgggggtgaa ctaccccan gaggaatcat gcttgggga tgcaanggtg ccaacaggag	360
gggcgggagg agcatgt	377

<210> 66

<211> 305

<212> DNA

<213> Homo sapien

<400> 66

acgcctttcc ctcagaattc agggaagaga ctgtgcctg ccttcctcgg ttgttgctg	60
agaaccctg tgcccttcc caccatatcc accctcgtc catctttgaa ctcaaacacg	120
aggaactaac tgcacctgg tctctcccc agtccccagt tcacctcca tccctcacct	180
tctccactc taagggatat caacactgcc cagcacaggg gccctgaatt tatgtggtt	240
ttatatattt ttaataaga tgcactttat gtcattttt aataaagtct gaagaattac	300
tggtt	305

<210> 67

<211> 385

<212> DNA

<213> Homo sapien

<400> 67

actacacaca ctccacttgc ccttgtagaga cactttgtcc cagcacttta ggaatgctga	60
ggtcggacca gccacatctc atgtgcaaga ttgccagca gacatcaggt ctgagagttc	120
cccttttaaa aaaggggact tgcttaaaaa agaagtctag ccacgattgt gtagagcagc	180
tgtgctgtgc tggagattca cttttgagag agttctctc tgagacctga tctttagagg	240
ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg	300
cctctcccag ggccccagcc tggccacacc tgcttacagg gcactctcag atgcccatac	360
catagtttct gtgctagtgg accgt	385

<210> 68

<211> 73

<212> DNA

<213> Homo sapien

<400> 68

acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaataaa	60
gtttttttaa tgg	73

<210> 69

<211> 536

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(536)

<223> n = A,T,C or G

<400> 69

actagtcacag	tgtgggtggaa	ttccattgtg	ttgggggctc	tcaccctect	ctcctgcagc	60
tccagctttg	tgctctgcct	ctgaggagac	catggccccag	catctgagta	ccctgctgct	120
cctgctggcc	accctagctg	tggccctggc	ctggagcccc	aaggaggagg	ataggataat	180
cccggtggc	atctataacg	cagacctcaa	tgatgagtgg	gtacagcgtg	cccttcactt	240
cgccatcagc	gagtataaca	aggccaccaa	agatgactac	tacagacgtc	cgctgcgggt	300
actaagagcc	aggcaacaga	ccgttggggg	ggtgaattac	ttcttcgacg	tagagggtggg	360
ccgaaccata	tgtaccaagt	cccagcccaa	cttggacacc	tgtgccttcc	atgaacagcc	420
agaactgcag	aagaaacagt	tgtgctcttt	cgagatctac	gaagtccct	ggggagaaca	480
gaangtccct	gggtgaaatc	caggtgtcaa	gaaatcctan	ggatctgttg	ccaggc	536

<210> 70

<211> 477

<212> DNA

<213> Homo sapien

<400> 70

atgaccccta	acagggggccc	tctcagccct	cctaattgacc	tccggcctag	ccatgtgatt	60
tcaattccac	tccataacgc	tcctcatact	aggcctacta	accaacacac	taaccatata	120
ccaatgatgg	cgcgatgtaa	cacgagaaag	cacataccaa	ggccaccaca	caccacctgt	180
ccaaaaaggc	cttcgatacg	ggataatcct	atattattacc	tcagaagtgt	ttttcttcgc	240
agggattttt	ctgagccttt	taccactcca	gcctagcccc	taccccccaa	ctaggagggc	300
actggcccc	aacaggcac	accccgctaa	atccccctaga	agtccactc	ctaaacacat	360
ccgtattact	cgcattcagga	gtatcaatca	cctgagctca	ccatagtcta	atagaaaaca	420
accgaaacca	aattattcaa	agcactgctt	attacaattt	tactgggtct	ctatttt	477

<210> 71

<211> 533

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(533)

<223> n = A,T,C or G

<400> 71

agagctatag	gtacagtgtg	atctcagctt	tgcaaacaca	ttttctacat	agatagtact	60
aggtattaat	agatatgtaa	agaaagaaat	cacaccatta	ataatggtaa	gattgggtta	120
tgtgatttta	gtggattttt	tggcaccctt	atatatgttt	tccaaacttt	cagcagtgat	180
attattttcca	taacttaaaa	agtgagtgtg	aaaaagaaaa	tctccagcaa	gcattctcatt	240
taaataaagg	tttgtcatct	ttaaaaatac	agcaatatgt	gactttttta	aaaagctgtc	300
aaataggtgt	gaccctacta	ataattatta	gaaatacatt	taaaaacatc	gagtacctca	360
agtcagtgtg	ccttgaaaaa	tatcaaatat	aactcttaga	gaaatgtaca	taaaagaatg	420
cttcgtaatt	ttggagtang	aggttccctc	ctcaattttg	tattttttaa	aagtacatgg	480
taaaaaaaaa	aattcacaac	agtatataag	gctgtaaaaat	gaagaattct	gcc	533

<210> 72

<211> 511

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(511)

<223> n = A,T,C or G

<400> 72
 tattacggaa aaacacacca cataattcaa ctancaaaga anactgcttc agggcgtgta 60
 aaatgaaagg cttccaggca gttatctgat taaagaacac taaaagaggg acaaggctaa 120
 aagccgcagg atgtctacac tatancaggc gctatttggg ttggctggag gagctgtgga 180
 aaacatggan agattgggtgc tgganacgc cgtggctatt cctcattggt attacanagt 240
 gaggttctct gtgtgcccac tggtttgaaa accgttctnc aataatgata gaatagtaca 300
 cacatgagaa ctgaaatggc ccaaaccag aaagaaagcc caactagatc ctcagaanac 360
 gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg 420
 atttctctcc attgcagcna naaaccggtt cttctaagca aacncagggtg atgatggcna 480
 aaatacaccc cctcttgaag naccnggagg a 511

<210> 73
 <211> 499
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (499)
 <223> n = A,T,C or G

<400> 73
 cagtgccagc actggtgcca gtaccagtac caataacagt gccagtgccca gtgccagcac 60
 cagtgggtggc ttcagtgtcg gtgccagcct gaccgccact ctcacatttg ggctcttcgc 120
 tggccttggg ggagctgggt ccagcaccag tggcagctct ggtgcctgtg gtttctccta 180
 caagtgagat tttagatatt gttaatcctg ccagctcttc tcttcaagcc aggggtgcac 240
 ctcagaaacc tactcaacac agcactctag gcagccacta tcaatcaatt gaagttgaca 300
 ctctgcatta aatctatttg ccatttctga aaaaaaaaaa aaaaaaaggg cgccgctcg 360
 antctagagg gcccgtttaa acccgctgat cagcctcgac tgtgccttct anttgcagc 420
 catctgttgt ttgccccctcc cccgntgcct tccttgacct tggaaagtgc cactcccact 480
 gtcccttctc aantaaat 499

<210> 74
 <211> 537
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (537)
 <223> n = A,T,C or G

<400> 74
 tttcatagga gaacacactg aggagatact tgaagaattt ggattcagcc gcgaagagat 60
 ttatcagctt aactcagata aaatcattga aagtaataag gtaaaagcta gtctctaact 120
 tccaggccca cggctcaagt gaatttgaat actgcattta cagtgtagag taacacataa 180
 cattgtatgc atggaaacat ggaggaacag tattacagtg tctaccact ctaatcaaga 240
 aaagaattac agactctgat tctacagtga tgattgaatt ctaaaaatgg taatcattag 300
 ggcttttgat ttataanact ttgggtactt atactaaatt atggtagtta tactgccttc 360
 cagtttgcct gatataattg ttgatattaa gattcttgac ttatatattg aatgggttct 420
 actgaaaaan gaatgatata ttcttgaaga catcgatata catttattta cactcttgat 480
 tctacaatgt agaaaatgaa ggaaatgccc caaattgtat ggtgataaaa gtccccgt 537

<210> 75
 <211> 467
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(467)

<223> n = A,T,C or G

<400> 75

caaanacaat	tgttcaaaaag	atgcaaatga	tacactactg	ctgcagctca	caaacacctc	60
tgcataattac	acgtacctcc	tcctgctcct	caagtagtgt	ggctctatctt	gccatcatca	120
cctgctgtct	gcttagaaga	acggctttct	gctgcaangg	agagaaatca	taacagacgg	180
tggcacaagg	aggccatctt	ttcctcatcg	gttattgtcc	ctagaagcgt	cttctgagga	240
tctagtggg	ctttctttct	gggtttgggc	catttcantt	ctcatgtgtg	tactattcta	300
tcattattgt	ataacgggtt	tcaaaccngt	gggcacncag	agaacctcac	tctgtaataa	360
caatgaggaa	tagccacggg	gatctccagc	accaaattctc	tccatgttnt	tccagagctc	420
ctccagccaa	cccaaatagc	cgctgctatn	gtgtagaaca	tcctgn		467

<210> 76

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(400)

<223> n = A,T,C or G

<400> 76

aagctgacag	cattcgggcc	gagatgtctc	gctccgtggc	cttagctgtg	ctcgcgctac	60
tctctctttc	tggcctggag	gctatccagc	gtactccaaa	gattcagggt	tactcacgtc	120
atccagcaga	gaatggaaag	tcaaatttcc	tgaattgcta	tgtgtctggg	tttcatccat	180
ccgacattga	agttgactta	ctgaagaatg	gagagagaat	tgaaaaagtg	gagcattcag	240
acttgtcttt	cagcaaggac	tggctcttct	atctcttgta	ctacactgaa	ttcaccccca	300
ctgaaaaaga	tgagtatgcc	tgccgtgtga	accatgtgac	tttgtcacag	ccaagatng	360
ttnagtggga	tcganacatg	taagcagcan	catgggaggt			400

<210> 77

<211> 248

<212> DNA

<213> Homo sapien

<400> 77

ctggagtgcc	ttggtgtttc	aagcccctgc	aggaagcaga	atgcaccttc	tgaggcacct	60
ccagctgccc	cggcggggga	tgcgaggctc	ggagcaccct	tgcccggctg	tgattgctgc	120
caggcactgt	tcattctcagc	ttttctgtcc	ctttgtctcc	ggcaagcgt	tctgctgaaa	180
gttcataatc	ggagcctgat	gtcttaacga	ataaaggctc	catgtctcac	ccgaaaaaaa	240
aaaaaaaa						248

<210> 78

<211> 201

<212> DNA

<213> Homo sapien

<400> 78

actagtccag	tgtggtggaa	ttccattgtg	ttgggcccga	cacaatggct	acctttaaca	60
tcaccagac	cccgcctgc	ccgtgcccc	cgctgtgtgt	aacgacagta	tgatgcttac	120
tctgtactc	ggaaactatt	tttatgta	taatgtatgc	tttcttggtt	ataaatgctt	180
gatttaaaaa	aaaaaaaaaa	a				201

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(552)
 <223> n = A,T,C or G

<400> 79
 tccttttgtt aggtttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60
 tttaggcagt gctagtaatt tctctgtaat gattctgtta ttactttcct attctttatt 120
 cctctttcct ctgaagatta atgaagttga aaattgaggt ggataaatac aaaaaggtag 180
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcaaaatt 240
 atgcaagtta gtaattactc agggttaact aaattacttt aatatgctgt tgaacctact 300
 ctgttccttg gctagaaaaa attataaaca ggactttgtt agtttgggaa gccaaattga 360
 taatattcta tgttctaaaa gttgggctat acataaanta tnaagaaata tgggaatttta 420
 ttcccaggaa tatgggggtc atttatgaat antaccggg anagaagttt tgantnaaac 480
 cngttttggt taatacgtta atatgtcctn aatnaacaag gcntgactta ttccaaaaa 540
 aaaaaaaaaa aa 552

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 80
 acagggattt gagatgctaa ggccccagag atcgtttgat ccaacctctt tattttcaga 60
 ggggaaaaatg gggcctaga gttacagagc atctagctgg tgcgctggca cccctggcct 120
 cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggccctgttt 180
 gcaattcacg ttgccacctc caacttaaac attcttcata tgtgatgtcc ttagtcacta 240
 aggtttaaact ttcccaccca gaaaaggcaa cttagataaa atcttagagt actttcatatc 300
 tcttctaagt cctcttccag cctcactttg agtcctcctt gggggttgat aggaantntc 360
 tcttggtttt ctcaataaaa tctctatcca tctcatgttt aatttggtac gcntaaaaat 420
 gctgaaaaaa ttaaaatggt ctggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476

<210> 81
 <211> 232
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(232)
 <223> n = A,T,C or G

<400> 81
 tttttttttg tatgecntcn ctgtgnggtt attgttgctg ccacctgga ggagcccagt 60
 ttctttctgta tctttctttt ctgggggagc ttcttggtc tgccctcca ttccagcct 120
 ctcaccccca tcttgcaatt ttgctagggt tggaggcgct ttcttggtag cccctcagag 180
 actcagtcag cgggaataag tcctaggggt ggggggtgtg gcaagccggc ct 232

<210> 82
 <211> 383
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (383)
 <223> n = A,T,C or G

<400> 82
 aggcgggagc agaagctaaa gccaaagccc aagaagagtgc gcagtgccag cactgggtgcc 60
 agtaccagta ccaataacat gccagtgccg gtgccagcac cagtgggtggc ttcagtgtctg 120
 gtgccagcct gaccgccact ctacacattg ggctcttcgc tggccttggt ggagctgggtg 180
 ccagcaccag tggcagctct ggtgcctgtg gttcttccta caagtgagat tttagatatt 240
 gttaatctct ccagtccttc tcttcaagcc aggggtgcac ctcagaaacc tactcaacac 300
 agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360
 ccatttcaaa aaaaaaaaaa aaa 383

<210> 83
 <211> 494
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (494)
 <223> n = A,T,C or G

<400> 83
 accgaattgg gaccgctggc ttataagcga tcatgtcttc cagtattacc tcaacgagca 60
 gggagatcga gtctatacgc tgaagaaatt tgacccgatg ggacaacaga cctgtctcagc 120
 ccatacctgct cggttctccc cagatgacaa atactctcga caccgaatca ccatcaagaa 180
 acgcttcaag gtgctcatga cccagcaacc gcgcccgtgc ctctgagggg ccttaaaactg 240
 atgtcttttc tgccacctgt taccctctcg agactccgta accaaaactct tcggactgtg 300
 agccctgatg cctttttgcc agccatactc tttggentcc agtctctcgt ggcgattgat 360
 tatgcttggtg tgaggcaatc atggtggcat caccatnaa gggaacacat ttganTTTTT 420
 tttncatat ttttaattac naccagaata nttcagaata aatgaattga aaaactctta 480
 aaaaaaaaaa aaaa 494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (380)
 <223> n = A,T,C or G

<400> 84
 gctggtagcc tatggcgtgg ccacggangg gctcctgagg cacgggacag tgacttccca 60
 agtatcctgc gccgcgtctt ctaccgtccc tacctgcaga tcttcgggca gattccccag 120
 gaggacatgg acgtggccct catggagcac agcaactgct cgtcggagcc cggcttcttg 180
 gcacaccctc ctggggccca ggccggcacc tgcgtctccc agtatgccaa ctggctgggtg 240
 gtgctgtccc tcgtcatctt cctgctcgtg gccaacatcc tgctggtcac ttgctcattg 300
 ccatgttcag ttacacattc ggcaaagtac agggcaacag cnatctctac tgggaaggcc 360
 agcgttncgg cctcaccgg 380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (481)
 <223> n = A,T,C or G

<400> 85
 gagttagctc ctccacaacc ttgatgaggt cgtctgcagt ggccctctcgc ttcataccgc 60
 tnccatcgctc atactgtagg ttggccacca cctcctgcat cttggggcgg ctaatatcca 120
 ggaaactctc aatcaagtca ccgtcnatna aacctgtggc tggttctgtc ttccgctcgg 180
 tgtgaaagga tctccagaag gagtgctcga tcttcccac acttttgatg actttattga 240
 gtcgattctg catgtccagc aggaggttgt accagctctc tgacagttag gtcaccagcc 300
 ctatcatgcc nttgaacgtg ccgaagaaca ccgagccttg tgtggggggt gnagtctcac 360
 ccagattctg cattaccaga nagccgtggc aaaaganatt gacaactcgc ccaggngaa 420
 aaagaacacc tcttgaagt gctngccgct cctcgteent tgggtggngc gcntnccctt 481
 t

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (472)
 <223> n = A,T,C or G

<400> 86
 aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgctg agaattcatt 60
 acttggaana gcaacttnaa gcctggacac tgggtattaaa attcacaata tgcaacactt 120
 taaacagtgt gtcaatctgc tcccttactt tgtcatcacc agtctgggaa taagggtatg 180
 ccctattcac acctgttaaa agggcgctaa gcatttttga ttcaacatct ttttttttga 240
 cacaagtccg aaaaaagcaa aagtaaacag ttnttaattt gttagccaat tcactttctt 300
 catgggacag agccatttga tttaaaaagc aaattgcata atattgagct ttgggagctg 360
 atatntgagc ggaagantag cctttctact tcaccagaca caactccttt catattggga 420
 tgttnacnaa agttatgtct cttacagatg ggatgctttt gtggcaattc tg 472

<210> 87
 <211> 413
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (413)
 <223> n = A,T,C or G

<400> 87
 agaaaccagt atctctnaaa acaacctctc ataccttggtg gacctaatth tgtgtgcgtg 60
 tgtgtgtgcg cgcatattat atagacagge acatcttttt tacttttcta aaagcttatg 120
 cctcttttgg atctatatct gtgaaagttt taatgatctg ccataatgtc ttggggacct 180
 ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240
 tttattcgac atgaaggaaa tttccagatn acaactctna caaactctcc cttgactagg 300

ggggacaaag aaaagcanaa ctgaacatna gaaacaattt cctggtgaga aattncataa 360
acagaaattg ggtngtatat tgaaanang catcattnaa acgttttttt ttt 413

<210> 88
<211> 448
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(448)
<223> n = A,T,C or G

<400> 88
cgcagcgggt cctctctatc tagctccagc ctctcgctg cccactccc cgcgtcccg 60
gtcctagccn accatggcgg ggccctgcg cgcccgctg ctctgctgg ccatcctggc 120
cgtggccctg gccgtgagcc cgcgggcgg ctccagtcgc ggcaagccgc cgcgcctggg 180
gggaggccca tggacccgc gtggaagaag aagggtgtgc gctgactg gactttgccg 240
tcggcnanta caacaaacc gcaacnactt ttaccnagcn cgcgctgcag gttgtgcgc 300
cccaancaa ttgttactng gggttaantaa ttcttggaag ttgaacctgg gccaaacnng 360
tttaccagaa ccnagccaat tngaacaatt nccctccat aacagcccct tttaaaaagg 420
gaancantcc tgnctctttc caaat ttt 448

<210> 89
<211> 463
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(463)
<223> n = A,T,C or G

<400> 89
gaattttgtg cactggccac tgtgatggaa ccattgggccc aggatgcttt gagttttatca 60
gtagtgttc tgccaaagtt ggtgttgtaa catgagtatg taaaatgtca aaaaattagc 120
agaggcttag gtctgcatat cagcagacag tttgtccgtg tattttgtag ccttgaagtt 180
ctcagtgaca agttnnttct gatgcgaagt tctnattcca gtgttttagt cctttgcac 240
tttnatgttn agacttgcc ctntnaaatt gcttttgtnt tctgcaggta ctatctgtgg 300
tttaacaaaa tagaannact tctctgcttn gaanatttga atatcttaca tctnaaaatn 360
aattctctcc ccatannaaa acccangccc ttggganaat ttgaaaaang gntccttcnn 420
aattcnana anttcagntn tcatacaaca naacngganc ccc 463

<210> 90
<211> 400
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

<400> 90
agggattgaa ggtctntnt actgtcggac tgttcancca ccaactctac aagttgctgt 60
cttccactca ctgtctgtaa gcntnttaac ccagactgta tcttcataaa tagaacaat 120
tcttcaccag tcacatcttc taggaccttt ttggattcag ttagtataag ctcttccact 180
tcctttgtta agacttcac tggtaaagtc ttaagttttg tagaaaggaa ttttaattgct 240

```

cggtctctaa caatgtcctc tccttgaagt atttggetga acaaccacc tnaagtcctt 300
ttgtgcatcc attttaata tacttaatag ggcattggtt cactagggtt aattctgcaa 360
gagtcactct tctgcaaaag ttgcgttagt atatctgcca 400

```

```

<210> 91
<211> 480
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (480)
<223> n = A,T,C or G

```

```

<400> 91
gagctcggat ccaataatct ttgtctgagg gcagcacaca tatncagtgc catggnaact 60
ggtctacccc acatgggagc agcatgccgt agntatataa ggtcattccc tgagtcagac 120
atgcctcttt gactaccgtg tgccagtgtt ggtgattctc acacacctcc nncgctctt 180
tgtggaaaaa ctggcacttg nctggaacta gcaagacatc acttacaat tcacccacga 240
gacacttgaa aggtgtaaca aagcgactct tgcattgctt ttgtccctc cggcaccagt 300
tgtcaatact aaccgctgg ttgacctcca tcacatttgt gatctgtagc tctggatata 360
tctcctgaca gtactgaaga acttcttctt ttgtttcaaa agcaactctt ggtgcctggt 420
ngatcagggt cccatttccc agtccgaatg ttcacatggc atatnttact tcccacaaaa 480

```

```

<210> 92
<211> 477
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (477)
<223> n = A,T,C or G

```

```

<400> 92
atacagccca natcccacca cgaagatgag cttgttgact gagaacctga tgcggtcact 60
ggtcccgcgt tagccccagc gactctccac ctgctggaag cggttgatgc tgcactcctt 120
cccacgcagg cagcagcggg gccggtcaat gaactccact cgtggcttgg ggttgacggg 180
taantgcagg aagaggctga ccacctgcgt gtccaccagg atgcccagct gtgcgggacc 240
tgcagcga aa ctctcgatg gtcattgagc ggaagcgaat gangcccagg gccttgccca 300
gaaccttccg cctgttctct ggctcacct gcagctgctg ccgctnacac tggcctcgg 360
accagcggac aaacggcgtt gaacagccgc acctcacgga tgccantgt gtcgcgtctc 420
aggaacggcn ccagcgtgtc cagggtcaatg tcggtgaanc ctccgcggtt aatggcg 477

```

```

<210> 93
<211> 377
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (377)
<223> n = A,T,C or G

```

```

<400> 93
gaacggctgg accttgcttc gcattgtgct gctggcagga ataccttggc aagcagctcc 60
agtccgagca gcccagacc gctgcgccc gaagctaagc ctgectctgg ccttcccctc 120
cgcctcaatg cagaaccant agtgggagca ctgtgtttag agttaagagt gaacactgtn 180

```

```

tgattttact tgggaatttc ctctgttata tagcttttcc caatgctaataa ttccaaacaa 240
caacaacaaa ataacatggt tgcctgttna gttgtataaaa agtangtgat tctgtatnta 300
aagaaaatat tactgttaca tatactgctt gcaanttctg tattttattgg tntctctggaa 360
ataaatatat tattaata 377

```

```

<210> 94
<211> 495
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(495)
<223> n = A,T,C or G

```

```

<400> 94
ccctttgagg ggttaggggc cagttcccag tggagaagaa aggccaggag aantgcgtgc 60
cgagctgang cagatttccc acagtgaccc cagagccctg ggctatagtc tctgaccctt 120
ccaaggaaaag accaccttct ggggacatgg gctggagggc aggacctaga ggcaccaagg 180
gaaggcccca ttccggggct gttccccgag gaggaagggg aggggctctg tgtgcccccc 240
acgaggaana ggccctgant cctgggatca nacaccctt cacgtgtatc cccacacaaa 300
tgcaagctca ccaaggctcc ctctcagtc ctccctaca ccctgaacgg nactggccc 360
acaccacccc agancancca ccgccatgg ggaatgtnt caaggaatcg cngggcaacg 420
tggactctng tccnnaagg gggcagaatc tccaatagan ggangaacc cttgctnana 480
aaaaaaaaana aaaaa 495

```

```

<210> 95
<211> 472
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(472)
<223> n = A,T,C or G

```

```

<400> 95
ggttacttgg ttctattgcc accacttagt ggatgtcatt tagaaccatt ttgtctgctc 60
cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt 120
tagctgtttt gaggtagtgc gcaccactgc accacaactc aatatgaaaa ctatttnact 180
tatttattat cttgtgaaaa gtatacaatg aaaaattttgt tcatactgta tttatcaagt 240
atgatgaaaa gcaatagata tatattcttt tattatgttn aattatgatt gccattatta 300
atcggaacaaa tgtggagtgt atgttctttt cacagtaata tatgcctttt gtaacttcac 360
ttggttattt tattgtaaat gaattacaaa attcttaatt taagaaaatg gtangttata 420
tttanttcan taatttcttt ccttgtttac gttaattttg aaaagaatgc at 472

```

```

<210> 96
<211> 476
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(476)
<223> n = A,T,C or G

```

```

<400> 96
ctgaagcatt tcttcaaact tntctacttt tgtcattgat acctgtagta agttgacaat 60

```

gtggtgaaat	ttcaaaatta	tatgtaactt	ctactagttt	tactttctcc	cccaagtctt	120
ttttaactca	tgatttttac	acacacaatc	cagaacttat	tatatagcct	ctaagtcttt	180
attcttcaca	gtagatgatg	aaagagtcct	ccagtgtctt	gngcanaatg	ttctagntat	240
agctggatac	atacngtggg	agttctataa	actcatacct	cagtgggact	naacccaaat	300
tgtgttagtc	tcaattccta	ccacactgag	ggagcctccc	aaatcactat	attcttatct	360
gcaggtaactc	ctccagaaaa	acngacaggg	caggcttgca	tgaaaaagtn	acatctgcgt	420
tacaaagtct	atcttctca	nangtctgtn	aaggaacaat	ttaatcttct	agcttt	476

<210> 97
 <211> 479
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(479)
 <223> n = A,T,C or G

<400> 97						
actctttcta	atgctgatat	gatcttgagt	ataagaatgc	atatgtcact	agaatggata	60
aaataatgct	gcaaacttaa	tgttcttatg	caaaatggaa	cgctaataaa	acacagctta	120
caatcgcaaa	tcaaaactca	caagtgtcta	tctgtttag	atttagtgta	ataagactta	180
gattgtgctc	cttcggatat	gattgtttct	canatcttgg	gcaatnttcc	ttagtcaaat	240
caggctacta	gaattctgtt	attggatatn	tgagagcatg	aaatttttaa	naatacactt	300
gtgattatna	aattaatcac	aaatttcact	tatacctgct	atcagcagct	agaaaaacat	360
ntnnntttta	natcaaagta	ttttgtgttt	ggaantgtnn	aaatgaaatc	tgaatgtggg	420
ttenatctta	ttttttcccn	gacnactant	tnctttttta	gggnctatcc	tganccatc	479

<210> 98
 <211> 461
 <212> DNA
 <213> Homo sapien

<400> 98						
agtgacttgt	cctccaacaa	aacccttga	tcaagtttgt	ggcactgaca	atcagacctt	60
tgctagttcc	tgatcatctat	tcgctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaactctatt	cctacttgta	cggactttga	180
agtgattcag	tttctctac	ggatgagaga	ctggctcaag	aatatcctca	tgcagcttta	240
tgaagccact	ctgaacacgc	tggttatcta	gatgagaaca	gagaaataaa	gtcagaaaat	300
ttacctggag	aaaagaggct	ttggctgggg	accatcccat	tgaaccttct	cttaaggact	360
ttaagaaaaa	ctaccacatg	ttgtgtatcc	tggtgccggc	cgtttatgaa	ctgaccacct	420
tttggataaa	tcttgacgct	cctgaacttg	ctcctctgcg	a		461

<210> 99
 <211> 171
 <212> DNA
 <213> Homo sapien

<400> 99						
gtggccgcgc	gcagggtgttt	cctcgtaccg	cagggccccc	tcccttcccc	aggcgtccct	60
cggcgctct	gcgggcccga	ggaggagcgg	ctggcgggtg	gggggagtgt	gacccaccct	120
cgggtgaaaa	agccttctct	agcgatctga	gaggcgtgcc	ttgggggtac	c	171

<210> 100
 <211> 269
 <212> DNA
 <213> Homo sapien

<400> 100

cggccgcaag	tgcaactcca	gctggggcgc	tgccgacgaa	gattctgcc	gcagttggtc	60
cgactgcgac	gacggcggcg	gcgacagtcg	caggtgcagc	gcgggcgcct	ggggtcttgc	120
aaggctgagc	tgacgccgca	gaggtcgtgt	cacgtcccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagcccgtt	gaagcgggag	gcctcgggga	gcccctcggg	aaggcgggcc	240
cgagagatac	gcaggtgcag	gtggccgc				269

<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

tttttttttt	ttttggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgtctttatg	ggggcggggt	ggggtagggg	aaacgaagca	aataacatgg	180
agtgggtgca	ccctccctgt	agaacctggt	tacaaagctt	ggggcagttc	acctgggtctg	240
tgaccgtcat	tttcttgaca	tcaatgttat	tagaagtcag	gatatctttt	agagagtcca	300
ctgttctgga	gggagattag	ggtttcttgc	caaatccaac	aaaatccact	gaaaaagtgtg	360
gatgatcagt	acgaataccg	aggcatattc	tcatatcggt	ggcca		405

<210> 102

<211> 470

<212> DNA

<213> Homo sapien

<400> 102

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
ggcacttaat	ccatttttat	ttcaaaatgt	ctacaaattt	aatcccatta	tacggtattt	120
tcaaaatcta	aattattcaa	attagccaaa	tccttaccaa	ataataccca	aaaatcaaaa	180
atatacttct	ttcagcaaac	ttgttacata	aattaaaaaa	atatatacgg	ctgggtgtttt	240
caaagtacaa	ttatcttaac	actgcaaaac	ttttaaggaa	ctaaaataaa	aaaaaacact	300
ccgcaaaagg	ttaaagggaac	aacaaattct	tttacaacaç	cattataaaa	atcatatctc	360
aaatcttagg	ggaatatata	cttcacacgg	gatcttaact	tttactcact	ttgtttattt	420
ttttaaacca	ttgtttgggc	ccaacacaa	ggaatcccc	ctggactagt		470

<210> 103

<211> 581

<212> DNA

<213> Homo sapien

<400> 103

tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttatttttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataatc	ttaggaatta	gcttaaaatc	tgccataagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaac	atccaaatc	240
atttttcttg	tcttttaaat	tatctaatt	ttccattttt	tcctatttcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggcct	ttttcctaaa	360
agggaaaaa	ggaagagaaa	tggcacacaa	aacaaacatt	ttatattcat	atttctacct	420
acgttaataa	aatagcattt	tgtgaagcca	gctcaaaaga	aggcttagat	ccttttatgt	480
ccatttttagt	cactaaacga	tatcaaagtg	ccagaatgca	aaaggtttgt	gaacatttat	540
tcaaaagcta	atataagata	tttcacatac	tcattctttct	g		581

<210> 104

<211> 578

<212> DNA

<213> Homo sapien

<400> 104

tttttttttt	tttttttttt	ttttttctct	cttttttttt	gaaatgagga	tcgagttttt	60
cactctctag	atagggcatg	aagaaaactc	atctttccag	ctttaaaata	acaatcaaat	120
ctcttatgct	atatcatatt	ttaagttaaa	ctaagtgc	actggcttat	cttctcctga	180
aggaaatctg	ttcattcttc	tcattcatat	agttatatca	agtactacct	tgcatattga	240
gaggtttttc	ttctctattt	acacatatat	ttccatgtga	atttgatca	aacctttatt	300
ttcatgcaaa	ctagaaaata	atgtttcttt	tgcataagag	aagagaacaa	tatagcatta	360
caaaactgct	caaattgttt	gttaagttaa	ccattataat	tagttggcag	gagctaatac	420
aatcacatt	tacgacagca	ataataaaac	tgaagtacca	gttaaataac	caaaaataatt	480
aaaggaacat	ttttagcctg	ggtataatta	gctaattcac	tttacaagca	tttattagaa	540
tgaattcaca	tggtattatt	cctagcccaa	cacaatgg			578

<210> 105

<211> 538

<212> DNA

<213> Homo sapien

<400> 105

tttttttttt	tttttcagta	ataatcagaa	caatatttat	ttttatattt	aaaattcata	60
gaaaagtgcc	ttacatttaa	taaaagtttg	tttctcaaag	tgatcagagg	aattagatat	120
gtcttgaaca	ccaatattaa	tttgaggaaa	atacaccaaa	atacatgaag	taaattattt	180
aagatcatag	agcttgtaag	tgaaaagata	aaatttgacc	tcagaaactc	tgagcattaa	240
aaatccacta	ttagcaata	aattactatg	gacttcttgc	tttaattttg	tgatgaatat	300
ggggtgtcac	tggtaaacca	acacattctg	aaggatacat	tacttagtga	tagattctta	360
tgtactttgc	taatacgtgg	atatgagttg	acaagtttct	ctttcttcaa	tcttttaagg	420
ggcgagaaat	gaggaagaaa	agaaaaggat	tacgcatact	gttctttcta	tggaaggatt	480
agatatgttt	cctttgccaa	tattaaaaaa	ataataatgt	ttactactag	tgaaacct	538

<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

tttttttttt	tttttttagtc	aagtttctat	ttttattata	attaaagtct	tggtcatttc	60
attttattagc	tctgcaactt	acatatttaa	attaaagaaa	cgtttttagac	aactgtacaa	120
tttataaatg	taaggtgcc	ttattgagta	atatattcct	ccaagagtgg	atgtgtccct	180
tctcccacca	actaatgaac	agcaacatta	gtttaatttt	attagtagat	atacactgct	240
gcaaacgcta	attctcttct	ccatcccat	gtgatattgt	gtatatgtgt	gagttggtag	300
aatgcatcac	aatctacaat	caacagcaag	atgaagctag	gctgggcttt	cgggtgaaaat	360
agactgtgtc	tgtctgaatc	aatgatctg	acctatctc	ggtggcaaga	actcttcgaa	420
ccgcttcctc	aaaggcgctg	ccacatttgt	ggctctttgc	acttgtttca	aaa	473

<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

cgccatggca	ctgcagggca	tctcggtcat	ggagctgtcc	ggcctggccc	cgggcccgtt	60
ctgtgctatg	gtcctggctg	acttcggggc	gcgtgtggta	cgcgtggacc	ggcccggctc	120
ccgctacgac	gtgagccgct	tgggcccggg	caagcgtcgt	ctagtgtgtg	acctgaagca	180
gccgcgggga	gccgcggtgc	tgcggcgctc	gtgcaagcgg	tcggatgtgc	tgctggagcc	240
cttcgccgcg	ggtgtcatgg	agaaaactcca	gctgggccc	gagattctgc	agcgggaaaa	300
tccaaggctt	atttatgcc	ggctgagtg	atttgccag	tcagggaagct	tctgcgggtt	360
agctggccac	gatatcaact	atttggcttt	gtcagggtgt	ctctcaaaaa	ttggcagaag	420
tgggtgagaat	ccgtatgccc	cgtggaatct	cctggctgac	tttgctggtg	gtggccttat	480
gtgtgcactg	ggcattataa	tggctctttt	tgaccgcaca	cgcactgaca	agggtcaggt	540

```

cattgatgca aatatggtgg aaggaacagc atatttaagt tcttttctgt ggaaaactca 600
gaaatcgagt ctgtgggaag cacctcgagg acagaacatg ttggatggtg gagcaccttt 660
ctatacgact tacaggacag cagatgggga attcatggct gttggagcaa tagaacccca 720
gttctacgag ctgctgatca aaggacttgg actaaagtct gatgaacttc ccaatcagat 780
gagcatggat gattggccag aaatgaagaa gaagtttgca gatgtatttg caaagaagac 840
gaaggcagag tgggtgcaaa tctttgacgg cacagatgcc tgtgtgactc cggttctgac 900
ttttgaggag gttgttcatac atgatcacia caaggaacgg ggctcgttta tcaccagtga 960
ggagcaggac gtgagccccc gccctgcacc tctgctgtta aacaccccag ccaccccttc 1020
tttcaaaagg gatcctttca taggagaaca cactgaggag atacttgaag aatttggatt 1080
cagccgcgaa gagatttatc agcttaactc agataaaatc attgaaagta ataaggtaaa 1140
agctagtctc taacttccag gccacggct caagtgaatt tgaatactgc atttacagtg 1200
tagagtaaca cataacattg tatgcatgga aacatggagg aacagtatta cagtgtccta 1260
ccactctaata caagaaaaga attacagact ctgattctac agtgatgatt gaattctaaa 1320
aatgggttatc attagggctt ttgatttata aaactttggg tacttatact aaattatggg 1380
agttattctg ccttcagtt tgcttgatat atttggtgat attaagattc ttgacttata 1440
ttttgaatgg gttctagtga aaaaggaatg atatattctt gaagacatcg atatacattt 1500
atttacactc ttgattctac aatgtagaaa atgaggaaat gccacaaatt gtatgggtgat 1560
aaaagtcacg tgaacacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1620
a

```

<210> 108

<211> 382

<212> PRT

<213> Homo sapien

<400> 108

```

Met Ala Leu Gln Gly Ile Ser Val Met Glu Leu Ser Gly Leu Ala Pro
1      5      10      15
Gly Pro Phe Cys Ala Met Val Leu Ala Asp Phe Gly Ala Arg Val Val
20     25     30
Arg Val Asp Arg Pro Gly Ser Arg Tyr Asp Val Ser Arg Leu Gly Arg
35     40     45
Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
50     55     60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
65     70     75     80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
85     90     95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
100    105    110
Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115    120    125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
130    135    140
Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
145    150    155    160
Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
165    170    175
Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
180    185    190
Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
195    200    205
Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
210    215    220
Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
225    230    235    240
Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
245    250    255

```

Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
 260 265 270
 Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
 275 280 285
 Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
 290 295 300
 His His Asp His Asn Lys Glu Arg Gly Ser Phe Ile Thr Ser Glu Glu
 305 310 315 320
 Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala
 325 330 335
 Ile Pro Ser Phe Lys Arg Asp Pro Phe Ile Gly Glu His Thr Glu Glu
 340 345 350
 Ile Leu Glu Glu Phe Gly Phe Ser Arg Glu Glu Ile Tyr Gln Leu Asn
 355 360 365
 Ser Asp Lys Ile Ile Glu Ser Asn Lys Val Lys Ala Ser Leu
 370 375 380

<210> 109
 <211> 1524
 <212> DNA
 <213> Homo sapien

<400> 109
 ggcacgaggg tgcgccaggg cctgagcgga ggcgggggca gcctcgccag cgggggcccc 60
 gggcctggcc atgcctcact gagccagcgc ctgcgcctct acctcgccga cagctggaac 120
 cagtgcgacc tagtggctct cacctgcttc ctctggggcg tgggctgcgg gctgaccccg 180
 ggtttgtagc acctgggccc cactgtcctc tgcacgact tcatggtttt cagggtgcgg 240
 ctgcttcaca tcttcacggg caacaaacag ctggggccca agatcgctcat cgtgagcaag 300
 atgatgaagg acgtgttctt ctctctcttc ttctcggcg tgtggctggg agcctatggc 360
 gtggccacgg aggggtcct gaggccacgg gacagtact tcccaagtat cctgcgcgcg 420
 gtcttctacc gtccctacct gcagatcttc gggcagattc cccaggagga catggacgtg 480
 gccctcatgg agcacagcaa ctgctcgctg gagccggct tctgggcaca cctcctggg 540
 gccagggcg gcacctgcgt ctcccagtat gccaaactggc tgggtggtgct gctcctcgtc 600
 atcttctcgc tctgtggccaa catctgctg gtcaacttgc tcatggcat gttcagttac 660
 acattcggca aagtacaggg caacagcgat ctctactgga aggcgcagcg ttaccgcctc 720
 atccgggaat tccactctcg gcccgcgctg gcccgcct ttatcgctcat ctcccacttg 780
 cgctctcgc tcaggcaatt gtgcaggcga ccccgaggcc cccagccgtc ctccccggcc 840
 ctcgagcatt tccgggttta ctttctaaag gaagccgagc ggaagctgct aacgtgggaa 900
 tccgtgcata aggagaactt tctgctggca cgcgtaggg acaagcggga gagcgactcc 960
 gagcgtctga agcgcacgtc ccagaagggtg gacttggcac tgaaacagct gggacacatc 1020
 cgcgagtagc aacagcgctt gaaagtgtg gagcgggagg tccagcagtg tagccgctc 1080
 ctgggtggg tggccgaggc cctgagccgc tctgccttgc tgccccagg tgggcccga 1140
 cccctgacc tgcttgggtc caaagactga gccctgctgg cggacttcaa ggagaagccc 1200
 ccacagggga ttttgcctct agagtaaggc tcatctgggc ctccggcccc gcacctggtg 1260
 gccttgcctc tgaggtgagc cccatgtcca tctgggccac tgtcaggacc acctttggga 1320
 gtgtcatcct tacaaccac agcatgccc gctcctccca gaaccagtc cagcctggga 1380
 ggatcaaggc ctggatcccg ggcgttatc catctggagg ctgcagggtc cttggggtaa 1440
 cagggaccac agaccctca cactcacag attcctcaca ctgggggaat aaagccattt 1500
 cagaggaaaa aaaaaaaaaa aaaa 1524

<210> 110
 <211> 3410
 <212> DNA
 <213> Homo sapien

<400> 110
 gggaaccagc ctgcacgcgc tggctccggg tgacagccgc gcgcctcggc caggatctga 60
 gtgatgagac gtgtccccac tgaggtgccc cacagcagca ggtgttgagc atgggctgag 120

aagctggacc	ggcaccaaag	ggctggcaga	aatgggccc	tggtgattc	ctaggcagtt	180
ggcggcagca	aggaggagag	gccgcagctt	ctggagcaga	gccgagacga	agcagttctg	240
gagtgcctga	acggccccct	gagccctacc	cgcttgccc	actatgggtc	agaggctgtg	300
ggtgagccgc	ctgctgccc	accggaaagc	ccagctcttg	ctggtcaacc	tgctaaccctt	360
tggcctggag	gtgtgttttg	ccgcaggcat	cacctatgtg	ccgcctctgc	tgctggaagt	420
gggggtagag	gagaagttca	tgaccatggt	gctgggcatt	ggtccagtgc	tgggcctggt	480
ctgtgtcccg	ctcctaggct	cagccagtga	ccactggcgt	ggacgctatg	gccgccgccg	540
gcccttcac	tgggcactgt	ccttgggcct	cctgctgagc	ctctttctca	tccaagggc	600
cggctggcta	gcagggtgc	tgtgcccgga	tcccaggccc	ctggagctgg	cactgctcat	660
cctgggcgtg	gggctgctgg	acttctgtgg	ccagggtgtg	ttcactccac	tggaggccct	720
gctctctgac	ctcttcggg	accggacca	ctgtcgccag	gcctactctg	tctatgcctt	780
catgatcagt	cttgggggt	gcctgggcta	cctcctgctt	gccattgact	gggacaccag	840
tgccctggcc	ccctacctgg	gcacccagga	ggagtgcctc	tttggcctgc	tcacctcat	900
cttctcacc	tgctagcag	ccacactgct	ggtggctgag	gaggcagcgc	tgggccccac	960
cgagccagca	gaagggtgt	cggccccctc	cttgtcgccc	cactgctgtc	catgccgggc	1020
ccgcttggt	ttccggaacc	tgggcgcctt	gcttccccgg	ctgcaccagc	tggtgtgccg	1080
catgccccgc	accctgcgcc	ggctcttcgt	ggctgagctg	tgcaactgga	tggcactcat	1140
gaccttcacg	ctgttttaca	cggatttcgt	gggcgagggg	ctgtaccagg	gcgtggccag	1200
agctgagccg	ggcaccgagg	cccggagaca	ctatgatgaa	ggcgttcgga	tgggcagcct	1260
ggggctgttc	ctgcagtgcg	ccatctccct	ggtcttctct	ctggtcatgg	accggtggt	1320
gcagcgattc	ggcactcgag	cagtctatct	ggccagtgtg	gcagctttcc	ctgtggctgc	1380
cggtgccaca	tgctgtccc	acagtgtggc	cgtggtgaca	gcttcagccg	ccctcaccgg	1440
gttcaccttc	tcagccctgc	agatcctgcc	ctacacactg	gcctccctct	accaccggga	1500
gaagcaggtg	ttcctgcccc	aataccgagg	ggacactgga	ggtgctagca	gtgaggacag	1560
cctgatgacc	agcttcctgc	caggccctaa	gcctggagct	cccttcccta	atggacacgt	1620
gggtgctgga	ggcagtggcc	tgctcccacc	tccaccgcgc	ctctgcgggg	cctctgcctg	1680
tgatgtctcc	gtacgtgtgg	tggtgggtga	gccaccgag	gccagggtgg	ttccgggccg	1740
gggcatctgc	ctggacctcg	ccatcctgga	tagtgccctc	ctgctgtccc	aggtggcccc	1800
atccctgttt	atgggtccca	ttgtccagct	cagccagctc	gtcactgect	atatggtgtc	1860
tgccgcaggc	ctgggtctgg	tcgccattta	ctttgtcaca	caggtagtat	ttgacaagag	1920
cgacttggcc	aaatactcag	cgtagaaaac	ttccagcaca	ttgggtgga	gggctgcct	1980
cactgggtcc	cagctccccg	ctcctgttag	ccccatgggg	ctgccgggct	ggccgcagct	2040
ttctgttgct	gccaagtaaa	tgtggctctc	tgctgccacc	ctgtgctgct	gaggtgcgta	2100
gctgcacagc	tgggggctgg	ggcgtccctc	tcctctctcc	ccagtctcta	gggctgctg	2160
actggaggcc	ttccaagggg	gtttcagttc	ggacttatac	agggaggcca	gaagggtcc	2220
atgcactgga	atgcggggac	tctgcagggt	gattaccag	gctcagggtt	aacagctagc	2280
ctcctagtgt	agacacacct	agagaagggg	ttttgggagc	tgaataaact	cagtcacctg	2340
gtttcccatc	tctaagcccc	ttaacctgca	gcttcgttta	atgtagctct	tgcatgggag	2400
tttctaggat	gaaacactcc	tccatgggat	ttgaacatat	gacttatttg	taggggaaga	2460
gtcctgaggg	gcaacacaca	agaaccaggt	cccctcagcc	cacagcactg	tctttttgct	2520
gatccacccc	cctcttacct	tttatcagga	tgtggcctgt	tggtccttct	gttgccatca	2580
cagagacaca	ggcatttaaa	tatttaactt	atttatttaa	caaagtagaa	gggaatccat	2640
tgctagcttt	tctgtgttgg	tgtetaatat	ttgggtaggg	tgggggatcc	ccaacaatca	2700
ggtccccctga	gatagctggg	cattgggctg	atcattgcca	gaatcttctt	ctcctggggg	2760
ctggcccccc	aaaatgccta	accaggacc	ttggaaattc	tactcatccc	aatgataat	2820
tccaaatgct	gttacccaag	gttaggggtg	tgaagggaag	tagagggtgg	ggcttcagggt	2880
ctcaacgggt	tccctaacca	cccctcttct	cttggcccag	cctgggttccc	cccacttcca	2940
ctccccctcta	ctctctctag	gactgggctg	atgaaggcac	tgcccaaaat	ttccccctacc	3000
cccaactttc	ccctaccccc	aactttcccc	accagctcca	caaccctggt	tggagctact	3060
gcaggaccag	aagcacaaag	tgcggtttcc	caagcctttg	tccatctcag	ccccagagt	3120
atatctgtgc	ttggggaatc	tcacacagaa	actcaggagc	acccccctgcc	tgagctaagg	3180
gaggtcttat	ctctcagggg	gggtttaagt	gccgtttgca	ataatgtcgt	cttattttatt	3240
tagcgggggtg	aatattttat	actgtaagt	agcaatcaga	gtataatgtt	tatgggtgaca	3300
aaattaaagg	ctttcttata	tgtttaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	3360
aaaaaaaaara	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa		3410

<210> 111

<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

agccaggcgt	ccctctgcct	gcccactcag	tggcaacacc	cgggagctgt	tttgtccttt	60
gtggagcctc	agcagttccc	tctttcagaa	ctcactgcca	agagccctga	acaggagcca	120
ccatgcagtg	cttcagcttc	attaagacca	tgatgacct	cttcaatttg	ctcatctttc	180
tgtgtggtgc	agccctgttg	gcagtgggca	tctgggtgtc	aatcgatggg	gcaccccttc	240
tgaagatctt	cgggccactg	tcgtccagtg	ccatgcagtt	tgtcaacgtg	ggctacttcc	300
tcacgcgagc	cggcggtgtg	gtctttgtct	ttggtttcct	gggctgctat	ggtgctaaga	360
ctgagagcaa	gtgtgccctc	gtgacgttct	tcttcactct	cctcctcatc	ttcattgctg	420
aggttgcagc	tgctgtggtc	gccttggtgt	acaccacaat	ggctgagcac	ttcctgacgt	480
tgctggtagt	gcctgccatc	aagaaagatt	atggttccca	ggaagacttc	actcaagtgt	540
ggaacaccac	catgaaaggg	ctcaagtgtc	gtggcttcac	caactatacg	gattttgagg	600
actcacccta	cttcaaagag	aacagtgcct	ttccccatt	ctgttgcaat	gacaacgtca	660
ccaacacagc	caatgaaacc	tgcaccaagc	aaaaggctca	cgaccaaaaa	gtagagggtt	720
gcttcaatca	gcttttgtat	gacatccgaa	ctaatgcagt	caccgtgggt	ggtgtggcag	780
ctggaattgg	gggcctcgag	ctggctgccca	tgattgtgtc	catgtatctg	tactgcaatc	840
tacaataagt	ccactttctg	ctctgccact	actgctgccca	catgggaact	gtgaagaggc	900
accctggcaa	gcagcagtg	ttgggggagg	ggacaggatc	taacaatgtc	acttgggcca	960
gaatggacct	gccctttctg	ctccagactt	ggggctagat	agggaccact	ccttttagcg	1020
atgcctgact	ttccttccat	tggtgggtgg	atgggtgggg	ggcattccag	agcctctaag	1080
gtagccagtt	ctgttgccca	ttccccagt	ctattaaacc	cttgatatgc	cccctaggcc	1140
tagtggtagt	cccagtgctc	tactggggga	tgagagaaag	gcattttata	gcctgggcat	1200
aagtgaaatc	agcagagcct	ctgggtggat	gtgtagaagg	cacttcaaaa	tgcataaacc	1260
tgttacaatg	ttaaaaaaa	aaaaaaaaa				1289

<210> 112

<211> 315

<212> PRT

<213> Homo sapien

<400> 112

Met	Val	Phe	Thr	Val	Arg	Leu	Leu	His	Ile	Phe	Thr	Val	Asn	Lys	Gln
1				5					10					15	
Leu	Gly	Pro	Lys	Ile	Val	Ile	Val	Ser	Lys	Met	Met	Lys	Asp	Val	Phe
			20					25					30		
Phe	Phe	Leu	Phe	Phe	Leu	Gly	Val	Trp	Leu	Val	Ala	Tyr	Gly	Val	Ala
		35				40					45				
Thr	Glu	Gly	Leu	Leu	Arg	Pro	Arg	Asp	Ser	Asp	Phe	Pro	Ser	Ile	Leu
	50				55					60					
Arg	Arg	Val	Phe	Tyr	Arg	Pro	Tyr	Leu	Gln	Ile	Phe	Gly	Gln	Ile	Pro
65				70					75					80	
Gln	Glu	Asp	Met	Asp	Val	Ala	Leu	Met	Glu	His	Ser	Asn	Cys	Ser	Ser
			85					90					95		
Glu	Pro	Gly	Phe	Trp	Ala	His	Pro	Pro	Gly	Ala	Gln	Ala	Gly	Thr	Cys
		100						105					110		
Val	Ser	Gln	Tyr	Ala	Asn	Trp	Leu	Val	Val	Leu	Leu	Leu	Val	Ile	Phe
		115					120					125			
Leu	Leu	Val	Ala	Asn	Ile	Leu	Leu	Val	Asn	Leu	Leu	Ile	Ala	Met	Phe
		130				135					140				
Ser	Tyr	Thr	Phe	Gly	Lys	Val	Gln	Gly	Asn	Ser	Asp	Leu	Tyr	Trp	Lys
145					150				155					160	
Ala	Gln	Arg	Tyr	Arg	Leu	Ile	Arg	Glu	Phe	His	Ser	Arg	Pro	Ala	Leu
			165					170					175		
Ala	Pro	Pro	Phe	Ile	Val	Ile	Ser	His	Leu	Arg	Leu	Leu	Leu	Arg	Gln
		180						185				190			
Leu	Cys	Arg	Arg	Pro	Arg	Ser	Pro	Gln	Pro	Ser	Ser	Pro	Ala	Leu	Glu

195 200 205
 His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr
 210 215 220
 Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp
 225 230 235 240
 Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val
 245 250 255
 Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg
 260 265 270
 Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly
 275 280 285
 Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly
 290 295 300
 Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
 305 310 315

<210> 113

<211> 553

<212> PRT

<213> Homo sapien

<400> 113

Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala
 1 5 10 15
 Gln Leu Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu
 20 25 30
 Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val
 35 40 45
 Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
 50 55 60
 Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly
 65 70 75 80
 Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
 85 90 95
 Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
 100 105 110
 Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
 115 120 125
 Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
 130 135 140
 Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
 145 150 155 160
 Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
 165 170 175
 Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
 180 185 190
 Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
 195 200 205
 Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
 210 215 220
 Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His
 225 230 235 240
 Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu
 245 250 255
 Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg
 260 265 270
 Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
 275 280 285

Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
 290 295 300
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
 340 345 350
 Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
 370 375 380
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
 420 425 430
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
 435 440 445
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser
 450 455 460
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
 465 470 475 480
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 485 490 495
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
 500 505 510
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
 515 520 525
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
 530 535 540
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala
 545 550

<210> 114

<211> 241

<212> PRT

<213> Homo sapien

<400> 114

Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ile Phe Leu Cys Gly Ala Ala Leu Leu Ala Val Gly Ile Trp Val
 20 25 30
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
 50 55 60
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile
 85 90 95
 Phe Ile Ala Glu Val Ala Ala Val Ala Leu Val Tyr Thr Thr
 100 105 110
 Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys
 115 120 125
 Asp Tyr Gly Ser Gln Glu Asp Phe Thr Gln Val Trp Asn Thr Thr Met

130	135	140
Lys Gly Leu Lys Cys Cys Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp		
145	150	155
Ser Pro Tyr Phe Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn		160
	165	170
Asp Asn Val Thr Asn Thr Ala Asn Glu Thr Cys Thr Lys Gln Lys Ala		175
	180	185
His Asp Gln Lys Val Glu Gly Cys Phe Asn Gln Leu Leu Tyr Asp Ile		190
	195	200
Arg Thr Asn Ala Val Thr Val Gly Gly Val Ala Ala Gly Ile Gly Gly		205
	210	215
Leu Glu Leu Ala Ala Met Ile Val Ser Met Tyr Leu Tyr Cys Asn Leu		220
225	230	235
Gln		240

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115
 gctctttctc tcccctctc tgaatttaat tctttcaact tgcaatttgc aaggattaca 60
 catttcaactg tgatgtatat tgtgttgcaa aaaaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttggtg aatccatctt gctttttccc cattggaact agtcattaac ccattctctga 180
 actggtagaa aaacatctga agagctagtc tatcagcatc tgacagggtga attggatggt 240
 tctcagaacc atttcaccca gacagcctgt ttctatcctg tttataaat tagtttgggt 300
 tctctacatg cataacaaac cctgctccaa tctgtcacat aaaagtctgt gacttgaagt 360
 ttagtc 366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (282)
 <223> n = A,T,C or G

<400> 116
 acaaagatga accatttcct atattatagc aaaattaaaa tctaccgta ttctaattatt 60
 gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa 120
 agactttact attttcatat ttttaagacac atgatttate ctatttttagt aacctgggtc 180
 atacgttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt 240
 tcaatctnga actatctana tcacagacat ttctattcct tt 282

<210> 117
 <211> 305
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (305)
 <223> n = A,T,C or G

<400> 117

```

acacatgtcg cttcactgcc ttcttagatg cttctggtca acatanagga acagggacca      60
tatttatcct ccttcctgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa      120
aataaggcaa aatatatgaa acaacaggtc tcgagatatt ggaaatcagt caatgaagga      180
tactgatccc tgatcactgt cctaatgcag gatgtgggaa acagatgagg tcacctctgt      240
gactgcccc a gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat      300
tgggt                                           305

```

<210> 118
 <211> 71
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (71)
 <223> n = A,T,C or G

```

<400> 118
accaaggtgt ntgaatctct gacgtgggga tctctgattc ccgcacaatc tgagtggaaa      60
aantcctggg t                                           71

```

<210> 119
 <211> 212
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (212)
 <223> n = A,T,C or G

```

<400> 119
actccggttg gtgtcagcag cacgtggcat tgaacatngc aatgtggagc ccaaaccaca      60
gaaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac      120
agtaagctgg cccttctaataaaaagaaaat tgaaagttt ctcactaanc ggaattaant      180
aatggantca aganactccc aggcctcagc gt                                           212

```

<210> 120
 <211> 90
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (90)
 <223> n = A,T,C or G

```

<400> 120
actcgttgca natcaggggc cccccagagt caccgttgca ggagtccttc tggctcttgc      60
ctccgccggc gcagaacatg ctgggggtggt                                           90

```

<210> 121
 <211> 218
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> (1)...(218)

<223> n = A,T,C or G

<400> 121

tgtancgtga	anacgacaga	naggggtgtc	aaaaatggag	aanccttgaa	gtcattttga	60
gaataagatt	tgctaaaaga	tttggggcta	aaacatgggt	attggggagac	atttctgaag	120
atatncangt	aaattangga	atgaattcat	ggttcttttg	ggaattcctt	tacgatngcc	180
agcatanact	tcatgtgggg	atancagcta	cccttgta			218

<210> 122

<211> 171

<212> DNA

<213> Homo sapien

<400> 122

taggggtgta	tgcaactgta	aggacaaaaa	ttgagactca	actggcttaa	ccaataaagg	60
catttggttag	ctcatgggaa	aggaagtcgg	atgggtggggc	atcttcagtg	ctgcatgagt	120
caccaccccg	gcggggtcat	ctgtgccaca	ggtcctgtgt	gacagtgcgg	t	171

<210> 123

<211> 76

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(76)

<223> n = A,T,C or G

<400> 123

tgtagcgtga	agacnacaga	atgggtgtgtg	ctgtgctatc	caggaacaca	tttattatca	60
ttatcaanta	ttgtgt					76

<210> 124

<211> 131

<212> DNA

<213> Homo sapien

<400> 124

acctttcccc	aaggccaatg	tectgtgtgc	taactggccg	gctgcaggac	agctgcaatt	60
caatgtgctg	ggcatatgg	aggggaggag	actctaaaat	agccaatttt	attctcttgg	120
ttaagatttg	t					131

<210> 125

<211> 432

<212> DNA

<213> Homo sapien

<400> 125

actttatcta	ctggctatga	aatagatggg	ggaaaattgc	gttaccaact	ataccactgg	60
cttgaaaaag	aggtgatagc	tcttcagagg	acttgtgact	tttgctcaga	tgctgaagaa	120
ctacagtctg	catttggcag	aaatgaagat	gaatttggat	taaatgagga	tgctgaagat	180
ttgcctcacc	aaacaaaagt	gaaacaactg	agagaaaatt	ttcaggaaaa	aagacagtgg	240
ctcttgaaat	atcagtcact	tttgagaatg	tttcttagtt	actgcatact	tcatggatcc	300
catgggtggg	gtcttgcac	tgtaagaatg	gaattgattt	tgcttttgca	agaatctcag	360
caggaaacat	cagaaccact	attttctagc	cctctgtcag	agcaaaccct	agtgcctctc	420
ctctttgctt	gt					432

<210> 126
<211> 112
<212> DNA
<213> Homo sapien

<400> 126
acacaacttg aatagtaaaa tagaaactga gctgaaattt ctaattcact ttctaaccat 60
agtaagaatg atatttcccc ccagggatca ccaaatattt ataaaaattt gt 112

<210> 127
<211> 54
<212> DNA
<213> Homo sapien

<400> 127
accacgaaac cacaacaag atggaagcat caatccactt gccaaagcaca gcag 54

<210> 128
<211> 323
<212> DNA
<213> Homo sapien

<400> 128
acctcattag taattgtttt gttgtttcat ttttttctaa tgtctccctt ctaccagctc 60
acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgctca 120
ttctctctga agtctaggtt acccattttg gggaccatt ataggcaata aacacagttc 180
ccaaagcatt tggacagttt cttgttggtt tttagaatgg ttttcccttt tcttagcctt 240
ttctgcaaa aggtcactc agtcccttgc ttgtcagtg gactgggctc cccagggcct 300
aggtgcctt cttttccatg tcc 323

<210> 129
<211> 192
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 129
acatacatgt gtgtatattt ttaaataatca cttttgtatc actctgactt tttagcatatc 60
tgaaaacaca ctaacataat ttntgtgaac catgatcaga tacaacccaa atcattcctc 120
tagcacattc atctgtgata naaagatagg tgagtttcat ttccttcacg ttggccaatg 180
gataaacaaa gt 192

<210> 130
<211> 362
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(362)
<223> n = A,T,C or G

<400> 130
ccctttttta tggaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca 60

tataatgacg caacaaaaag gtgctgttta gtctatggg tcagtttatg cccctgacaa 120
 gtttccattg tgttttgccg atcttctggc taatcgtggg atcctccatg ttattagtaa 180
 ttctgtattc cattttgtta acgectggta gatgtaacct gctangaggc taactttata 240
 cttattttaa agctcttatt ttgtggtcat taaaatggca atttatgtgc agcactttat 300
 tgcagcagga agcacgtgtg ggttggttgg aaagctcttt gctaacttta aaaagtaatg 360
 gg 362

<210> 131

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(332)

<223> n = A,T,C or G

<400> 131

ctttttgaaa gatcgtgtcc actcctgtgg acatcttgtt ttaatggagt ttcccatgca 60
 gtangactgg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaaatgaga 120
 gttctcccag gttcgccctg ctgctccaag tctcagcagc agcctctttt aggaggcatc 180
 ttctgaacta gattaaggca gcttgtaaat ctgatgtgat ttggttttatt atccaactaa 240
 cttccatctg ttatcactgg agaaagccca gactccccan gacnggtacg gattgtgggc 300
 atanaaggat tgggtgaagc tggcgttgtg gt 332

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(322)

<223> n = A,T,C or G

<400> 132

acttttgcca ttttgtatat ataaacaatc ttgggacatt ctctgaaaa ctaggtgtcc 60
 agtgggctaag agaactcgat ttcaagcaat tctgaaagga aaaccagcat gacacagaat 120
 ctcaaattcc caaacagggg ctctgtggga aaaatgaggg aggacctttg tatctcgggt 180
 tttagcaagt taaaatgaan atgacaggaa aggcttattt atcaacaaag agaagagttg 240
 ggatgcttct aaaaaaaact ttggtagaga aaataggaat gctnaatcct agggaagcct 300
 gtaacaatct acaattggtc ca 322

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 133

acaagccttc acaagtttaa ctaaattggg attaatcttt ctgtanttat ctgcataatt 60
 cttgtttttc tttccatctg gtcctctggg tgacaatttg tggaaacaac tctattgcta 120
 ctattttaaaa aaaatcacaa atctttccct ttaagctatg ttnaattcaa actattcctg 180
 ctattcctgt tttgtcaaag aaattatatt tttcaaaata tgtntatttg tttgatgggt 240

cccacgaaac actaataaaa accacagaga ccagcctg

278

<210> 134
 <211> 121
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(121)
 <223> n = A,T,C or G

<400> 134
 gtttanaaaa cttgttttagc tccatagagg aaagaatggt aaactttgta ttttaaaaca 60
 tgattctctg aggttaaact tggttttcaa atgttatatt tacttgatt ttgcttttgg 120
 t 121

<210> 135
 <211> 350
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(350)
 <223> n = A,T,C or G

<400> 135
 acttanaacc atgcctagca catcagaatc cctcaaagaa catcagtata atcctatacc 60
 atancaagt gtgactggtt aagcgtgcga caaagggtcag ctggcacatt acttggtgtgc 120
 aaacttgata cttttgttct aagtaggaac tagtatacag tncctaggan tggtagtcca 180
 ggggtgcccc caactcctgc agccgctcct ctgtgccagn cctgnaagg aactttcgtc 240
 ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgctgag 300
 ttcccaagga tgcaaagcct ggtgctcaac tctggggcg tcaactcagt 350

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtt 60
 gctgtgattg tatccgaata ntctcgtga gaaaagataa tgagatgacg tgagcagcct 120
 gcagacttgt gtctgccttc aanaagccag acaggaaggc cctgcctgcc ttggctctga 180
 cctggcgggc agccagccag ccacaggtgg gcttcttcct tttgtggtga caacnccaag 240
 aaaactgcag agggccaggg tcaggtgtga gtgggtangt gaccataaaa caccaggtgc 300
 tcccaggaac ccgggcaaag gccatcccca cctacagcca gcatgccac tggcgtgatg 360
 ggtgcagang gatgaagcag ccagntgttc tgctgtggt 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(165)

<223> n = A,T,C or G

<400> 137

actggtgtgg tnggggggtga tgctgggtgg anaagttgan gtgacttcan gatggtgtgt	60
ggaggaagtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga	120
ttggctggtc ccactgggtg tcactgtcat tgggtggggt cctgt	165

<210> 138

<211> 338

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(338)

<223> n = A,T,C or G

<400> 138

actcactgga atgccacatt cacaacagaa tcagaggtct gtgaaaacat taatggctcc	60
ttaacttctc cagtaagaat cagggacttg aaatggaaac gttaacagcc acatgcccaa	120
tgctgggcag tctcccatgc cttccacagt gaaagggctt gagaaaaatc acatccaatg	180
tcatgtgttt ccagccacac caaaagggtc ttgggtggga gggctggggg catananggt	240
cangcctcag gaagcctcaa gttccattca gctttgccac tgtacattcc ccatntttaa	300
aaaaactgat gccttttttt tttttttttg taaaattc	338

<210> 139

<211> 382

<212> DNA

<213> Homo sapien

<400> 139

gggaatcttg gtttttggca tctggtttgc ctatagccga ggccactttg acagaacaaa	60
gaaagggact tcgagtaaga aggtgattta cagccagcct agtccccgaa gtgaaggaga	120
attcaaacag acctcgatc tctgggtgtg agcctgggtc gtccaccgcc tatcatctgc	180
atttgctta ctcaggtgct accggactct ggccccgat gtctgtagtt tcacaggatg	240
ccttattttgt cttctacacc ccacagggcc cctacttct tcggatgtgt ttttaataat	300
gtcagctatg tgccccatcc tccttcacgc cctccctccc tttcctacca ctgctgagtg	360
gcctggaact tgtttaaagt gt	382

<210> 140

<211> 200

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(200)

<223> n = A,T,C or G

<400> 140

accaaantct ctttctgttg tgttngattt tactataggg gtttngcttn ttctaaanat	60
acttttcatt taacancttt tgttaagtgt caggctgcac ttgctccat anaattattg	120
ttttcacatt tcaacttgta tgtgtttgtc tcttanagca ttggtgaaat cacatatttt	180
atattcagca taaaggagaa	200

<210> 141
 <211> 335
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (335)
 <223> n = A,T,C or G

<400> 141
 actttatattt caaaacactc atatgttgca aaaaacacat agaaaaataa agtttggtgg 60
 ggggtgctgac taaacttcaa gtcacagact tttatgtgac agattggagc agggtttgtt 120
 atgcatgtag agaaccctaaa ctaatttatt aaacaggata gaaacaggct gtctgggtga 180
 aatgggttctg agaaccatcc aattcacctg tcagatgctg atanactagc tcttcagatg 240
 tttttctacc agttcagaga tnggttaatg actanttcca atgggggaaaa agcaagatgg 300
 attcacaac caagtaattt taaacaaaga cactt 335

<210> 142
 <211> 459
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (459)
 <223> n = A,T,C or G

<400> 142
 accagggttaa tattgccaca tatatccttt ccaattgcgg gctaaacaga cgtgtattta 60
 ggggtgttta aagacaaccc agcttaatat caagagaaat tgtgacctt catggagtat 120
 ctgatggaga aaacactgag ttttgacaaa tcttatttta ttcagatagc agtctgatca 180
 cacatgggtcc aacaacactc aaataataaa tcaaataatna tcagatgtta aagattggtc 240
 ttcaaacatc atagccaatg atgccccgct tgcctataat ctctccgaca taaaaccaca 300
 tcaaacactc agtggccacc aaaccattca gcacagcttc cttaactgtg agctgtttga 360
 agctaccagt ctgagcacta ttgactatnt ttttcangct ctgaatagct ctagggatct 420
 cagcangggg gggaggaacc agtcaacct tggcggtant 459

<210> 143
 <211> 140
 <212> DNA
 <213> Homo sapien

<400> 143
 acatttcctt ccaccaagtc aggactcctg gcttctgtgg gagttcttat cacctgaggg 60
 aaatccaaac agtctctcct agaaaggaat agtgtcacca accccacca tctccctgag 120
 accatccgac ttccctgtgt 140

<210> 144
 <211> 164
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (164)
 <223> n = A,T,C or G

<400> 144

acttcagtaa caacatacaa taacaacatt aagtgtatat tgccatcttt gtcattttct 60
 atctatacca ctctcccttc tgaaaacaan aatcactanc caatcactta taaaaatttg 120
 aggcaattaa tccatatttg ttttcaataa ggaaaaaaag atgt 164

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(303)

<223> n = A,T,C or G

<400> 145

acgtagacca tccaactttg tatttgtaat ggcaaacatc cagnagcaat tcctaaacaa 60
 actggagggt atttataccc aattatccca ttcattaaca tgccctctc ctcaggctat 120
 gcaggacagc tatcataagt cggcccaggc atccagatac taccatttgt ataaacttca 180
 gtaggggagt ccatccaagt gacaggtcta atcaaaggag gaaatggaac ataagcccag 240
 tagtaaaatn ttgcttagct gaaacagcca caaaagactt accgccgtgg tgattaccat 300
 caa 303

<210> 146

<211> 327

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(327)

<223> n = A,T,C or G

<400> 146

actgcagctc aattagaagt ggtctctgac tttcatcanc ttctccctgg gctccatgac 60
 actggcctgg agtgactcat tgctctgggt ggttgagaga gctcctttgc caacaggcct 120
 ccaagtcagg gctgggattt gtttcccttc cacattctag caacaatatg ctggccactt 180
 cctgaacagg gaggggtgga ggagccagca tggaacaagc tgccactttc taaagtagcc 240
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgacctgca ggatggaatg 300
 taggggtgag ctgtgtgact ctatggt 327

<210> 147

<211> 173

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(173)

<223> n = A,T,C or G

<400> 147

acattgtttt tttgagataa agcattgana gagctctcct taacgtgaca caatggaagg 60
 actggaacac atacccacat ctttgttctg aggataatt ttctgataaa gtcttgtctg 120
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gtt 173

<210> 148

<211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 148
 acaaccactt tatctcatcg aatttttaac ccaaactcac tcaactgtgcc tttctatcct 60
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120
 gccctactac ctgctgcaat aatcacattc ccttcctgtc ctgacctga agccattggg 180
 gtgggtctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgctcac 240
 nccanccac ctcaccgacc ccatectctt acacagctac ctcttgctc tctaacccca 300
 tagattatnt ccaaattcag tcaattaagt tactattaac actctaccgc acatgtccag 360
 caccactggg aagccttctc cagccaacac acacacacac acacacatat 420
 ccaggcacag gctacctcat cttcacaatc acccctttaa ttaccatgct atggtgg 477

<210> 149
 <211> 207
 <212> DNA
 <213> Homo sapien

<400> 149
 acagttgtat tataatatca agaaataaac ttgcaatgag agcatttaag agggaagaac 60
 taacgtatatt tagagagcca aggaagggtt ctgtggggag tgggatgtaa ggtggggcct 120
 gatgataaat aagagtcagc caggttaagt ggtggtgtgg tatgggcaca gtgaagaaca 180
 tttcaggcag agggaacagc agtgaaa 207

<210> 150
 <211> 111
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(111)
 <223> n = A,T,C or G

<400> 150
 accttgattt cattgtctgt ctgatggaaa cccaactatc taatttagct aaaacatggg 60
 cacttaaatg tggtcagtgt ttggacttgt taactantgg catctttggg t 111

<210> 151
 <211> 196
 <212> DNA
 <213> Homo sapien

<400> 151
 agcgcggcag gtcattattga acattccaga taactatcat tactcgatgc tgttgataac 60
 agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaaaaccat 120
 ggataccaac cggaaaacc cttatcccgca cagccactg tggccccac tgtctacgag 180
 gtgcatccgg ctgagt 196

<210> 152
 <211> 132
 <212> DNA

<213> Homo sapien

<400> 152

acagcacttt cacatgtaag aagggagaaa ttcctaaatg taggagaaaag ataacagAAC	60
cttccccctt tcatctagtG gtggaaacct gatgctttat gttgacagga atagaaccag	120
gaggagttt gt	132

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(285)

<223> n = A,T,C or G

<400> 153

acaanaccca nganaggcca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag	60
cttctgtctt tatgtcctca tctgacaact ctttaccatt tttatcctcg ctcagcagga	120
gcacatcaat aaagtccaaa gtcttggact tggccttggc ttggaggaag tcatcaacac	180
cctggctagt gaggggtgagg cgccgtcctt ggatgacggc atctgtgaag tctgtcacca	240
gtctgcaggc cctgtggaag cgccgtccac acggagtnag gaatt	285

<210> 154

<211> 333

<212> DNA

<213> Homo sapien

<400> 154

accacagtcc tgttgggcca gggcttcatt accctttctg tgaaaagcca tattatcacc	60
accccaaatt tttccttaaa tatctttaac tgaaggggtc agcctcttga ctgcaaagac	120
cctaagccgg ttacacagct aactcccact ggccctgatt tgtgaaattg ctgctgcctg	180
attggcacag gattcgaagg ttttcagctc cctctctcct tggaacgaga ctctgatttg	240
agtttcacaa attctcgggc cactctgtca ttgtcctctt gaaataaaat ccggagaatg	300
gtcaggcctg tctcatccat atggatcttc cgg	333

<210> 155

<211> 308

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(308)

<223> n = A,T,C or G

<400> 155

actggaaata ataaaaccca catcacagtG ttgtgtcaaa gatcatcagg gcatggatgg	60
gaaagtgtt tgggaactgt aaagtgccta acacatgatc gatgattttt gttataatat	120
ttgaatcacg gtgcatacaa actctcctgc ctgtcctcct tgggccccag ccccagcccc	180
atcacagctc actgtctctg tcatccaggc ccagcatgta gtggctgatt cttcttggct	240
gcttttagcc tccanaagtt tctctgaagc caaccaaaac tctangtgta aggcattgctg	300
gcccttgg	308

<210> 156

<211> 295

<212> DNA

<213> Homo sapien

<400> 156
 accttgctcg gtgcttgga catattagga actcaaaata tgagatgata acagtgccta 60
 ttattgatta ctgagagaac tgtagacat ttagttgaag attttctaca caggaactga 120
 gaataggaga ttatgtttgg ccctcatatt ctctcctatc ctcttgccct cattctatgt 180
 ctaatatatt ctcaatcaaa taaggttagc ataatcagga aatcgaccaa ataccaatat 240
 aaaaccagat gtctatcctt aagattttca aatagaaaac aaattaacag actat 295

<210> 157

<211> 126

<212> DNA

<213> Homo sapien

<400> 157
 acaagttaa atagtgtgt cactgtgcat gtgctgaaat gtgaaatcca ccacatttct 60
 gaagagcaaa acaaattctg tcatgtaatc tctatcttgg gtcgtgggta tatctgtccc 120
 cttagt 126

<210> 158

<211> 442

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (442)

<223> n = A,T,C or G

<400> 158
 acccaactggg cttggaaaca cccatcctta atacgatgat ttttctgtcg tgtgaaaatg 60
 aanccagcag gctgccccta gtcagtcctt ccttcagag aaaaagagat ttgagaaagt 120
 gcctgggtaa ttcaccatta atttctctcc ccaaactctc tgagtcttcc cttaatat 180
 ctggtgggtt tgaccaaagc aggtcatggg ttgttgagca tttgggatcc cagtgaagta 240
 natgtttgta gccttgcata cttagccctt cccacgcaca aacggagtgg cagagtgggtg 300
 ccaacctgt tttccagtc cacgtagaca gattcacagt gcggaattct ggaagctgga 360
 nacagacggg ctctttgcag agccgggact ctgagangga catgagggcc tctgcctctg 420
 tgttcattct ctgatgtcct gt 442

<210> 159

<211> 498

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (498)

<223> n = A,T,C or G

<400> 159
 atttccaggt aacgttggtt tttccgttga gcctgaactg atgggtgacg ttgtaggttc 60
 tccaacaaga actgaggttg cagagcgggt aggggaagagt gctgttccag ttgcacctgg 120
 gctgctgtgg actgttggtt attcctcact acggcccag gttgtggaac tggcanaaag 180
 gtgtgtgtgt gganttgagc tggggcggt gtggtaggtt gtgggtctct caacaggggc 240
 tgctgtgggt cggggangtg aangtggtgt gtcacttgag cttggccagc tctggaaagt 300
 antanattct tctgaaggc cagcgttgt ggagctggca ngggtcantg ttgtgtgtaa 360
 cgaaccagtg ctgctgtggg tgggtgtana tctccacaa agcctgaagt tatggtgtcn 420
 tcaggtaana atgtggttct agtgtccctg ggcnctgtg gaaggttgta nattgtcacc 480

aagggaataa gctgtggt

498

<210> 160

<211> 380

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (380)

<223> n = A,T,C or G

<400> 160

acctgcatcc agcttcctcg ccaaactcac aaggagacat caacctctag acagggaaac	60
agcttcagga tacttcagg agacagagcc accagcagca aaacaaatat tccatgcct	120
ggagcatggc atagaggaag ctganaaatg tggggtctga ggaagccatt tgagtctggc	180
cactagacat ctcatcagcc acttggtgta agagatgcc catgaccca gatgcctctc	240
ccacccttac ctccatctca cacacttgag cttccactc tgtataattc taacatcctg	300
gagaaaaatg gcagtttgac cgaacctgtt cacaacggt gaggtgatt tctaacgaaa	360
cttgtagaat gaagcctgga	380

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

actccacatc cctctgagc aggcggttgt cgttcaaggt gtatttgcc ttgcctgtca	60
cactgtccac tggcccctta tccacttggg gcttaatccc tcgaaagagc atgt	114

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

actttctgaa tcgaatcaaa tgatacttag tgtagtttta atatcctcat atatatcaaa	60
gttttactac tctgataatt ttgtaaacca ggtaaccaga acatccagtc atacagcttt	120
tggtgatata taacttggca ataaccagc ctggtgatac ataaaactac tcactgt	177

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (137)

<223> n = A,T,C or G

<400> 163

catttatata gacaggcgtg aagacattca cgacaaaaac gggaaattct atcccgtgac	60
canagaaggc agctacggct actcctacat cctggcgtgg gtggccttcg cctgcacett	120
catcagcggc atgatgt	137

<210> 164

<211> 469

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (469)

<223> n = A,T,C or G

<400> 164

cttatcacaa tgaatgttct cctgggcagc gttgtgatct ttgccacctt cgtgacttta	60
tgcaatgcat catgctatct catacctaata gagggagttc caggagattc aaccaggaaa	120
tgcatggatc tcaaggaaa caaacaccca ataaactcgg agtggcagac tgacaactgt	180
gagacatgca cttgtctacga aacagaaatt tcatgttgca cccttgtttc tacacctgtg	240
ggttatgaca aagacaactg ccaaagaatc ttcaagaagg aggactgcaa gtatatcgtg	300
gtggagaaga aggacccaaa aaagacctgt tctgtcagtg aatggataat ctaatgtgct	360
tctagtaggc acagggctcc caggccaggc ctcaattctc tctggcctct aatagtcaat	420
gattgtgtag ccatgcctat cagtaaaaag atntttgagc aaacacttt	469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (195)

<223> n = A,T,C or G

<400> 165

acagtttttt atatatatcg acattgccgg cacttggtgtt cagtttcata aagctgggtg	60
atccgctgtc atccactatt ccttggttag agtaaaaatt attcttatag cccatgtccc	120
tgcaggccgc ccgcctgtag ttctcgttcc agtcgtcttg gcacacaggg tgccaggact	180
tcctctgaga tgagt	195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (383)

<223> n = A,T,C or G

<400> 166

acatcttagt agtgtggcac atcagggggc catcagggtc acagtcactc atagcctcgc	60
cgagggtcga gtccacacca ccggtgtagg tgtgctcaat cttgggcttg gcgccacct	120
ttggagaagg gatatgctgc acacacatgt ccacaaagcc tgtgaactcg ccaaagaatt	180
tttgagacc agcctgagca aggggcggat gttcagcttc agctcctcct tcgtcaggtg	240
gatgccaacc tcgtctangg tccgtgggaa gctgggtgcc acntcaccta caacctgggc	300
gangatctta taaagaggct ccnagataaa ctccacgaaa cttctctggg agctgctagt	360
nggggccttt ttggtgaact ttc	383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(247)
 <223> n = A,T,C or G

<400> 167
 acagagccag accttggcca taaatgaanc agagattaag actaaacccc aagtcganat 60
 tggagcagaa actggagcaa gaagtgggcc tggggctgaa gtagagacca aggccactgc 120
 tatanccata cacagagcca actctcaggc caaggcnatg gttggggcag anccagagac 180
 tcaatctgan tccaaagtgg tggctggaac actggtcatg acanaggcag tgactctgac 240
 tgangtc 247

<210> 168
 <211> 273
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(273)
 <223> n = A,T,C or G

<400> 168
 acttctaagt tttctagaag tggaaggatt gtantcatcc tgaaaatggg tttacttcaa 60
 aatccctcan ccttgttctt cactactgtc tatactgana gtgtcatgtt tccacaaagg 120
 gctgacacct gagcctgnat tttactcat ccttgagaag ccctttccag taggggtgggc 180
 aattcccaac ttccttgcca caagcttccc aggttttctc ccctggaaaa ctccagcttg 240
 agtcccagat acactcatgg gctgccctgg gca 273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(431)
 <223> n = A,T,C or G

<400> 169
 acagccttgg cttccccaaa ctccacagtc tcagtgcaga aagatcatct tccagcagtc 60
 agctcagacc aggttcaaag gatgtgacat caacagtttc tggtttcaga acaggttcta 120
 ctactgtcaa atgaccccc atacttctc aaaggctgtg gtaagttttg cacaggtgag 180
 ggcagcagaa aggggggtant tactgatgga caccatcttc tctgtatact ccacttgac 240
 cttgccatgg gcaaaggccc ctaccacaaa aacaatagga tcaactgctgg gcaccagctc 300
 acgcacatca ctgacaaccg ggatggaaaa agaantgccca actttcatac atccaactgg 360
 aaagtgatct gatactggat tcttaattac cttcaaaagc ttctgggggc catcagctgc 420
 tcgaacactg a 431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(266)
 <223> n = A,T,C or G

<400> 170
 acctgtgggc tgggctgtta tgcctgtgcc ggctgtgaa agggagtcca gaggtggagc 60
 tcaaggagct ctgcaggcat tttgccaanc ctctccanag canagggagc aacctacact 120
 ccccgctaga aagacaccag attggagtcc tgggaggggg agttgggggtg ggcatttgat 180
 gtatacttgt cacctgaatg aangagccag agaggaanga gacgaanatg anattggcct 240
 tcaaagctag gggctctggca ggtgga 266

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (1248)

<223> n = A,T,C or G

<400> 171
 ggcagccaaa tcataaacgg cgaggactgc agcccgact cgcagccctg gcaggcgga 60
 ctggctcatgg aaaacgaatt gttctgctcg ggcgtcctgg tgcacccga gtgggtgctg 120
 tcagccgcac actgtttcca gaagtgaagt cagagctcct acaccatcgg gctgggcctg 180
 cacagtcttg aggccgacca agagccaggg agccagatgg tggaggccag cctctccgta 240
 cggcaccag agtacaacag acccttgctc gctaacgacc tcatgctcat caagtggac 300
 gaatccgtgt ccgagtctga caccatccgg agcatcagca ttgcttcgca gtgccctacc 360
 gcgggggaact cttgcctcgt ttctggctgg ggtctgctgg cgaacggcag aatgcctacc 420
 gtgctgcagt gcgtgaacgt gtcggtggg tctgaggagg tctgcagtaa gctctatgac 480
 ccgctgtacc accccagcat gttctgcgcc ggccggagggc aagaccagaa ggactcctgc 540
 aacggtgact ctggggggcc cctgatctgc aacgggtact tgcagggcct tgtgtctttc 600
 ggaaaagccc cgtgtggcca agttggcgtg ccaggtgtct acaccaacct ctgcaaattc 660
 actgagtga tagagaaaac cgtccaggcc agttaactct ggggactggg aacccatgaa 720
 attgaccccc aaatacatcc tgcggaagga attcaggaat atctgttccc agcccctcct 780
 cccctaggcc caggagtcca ggccccagc cctcctccc tcaaaccaag ggtacagatc 840
 cccagcccct cctccctcag acccaggagt ccagacccc cagcccctcc tccctcagac 900
 ccaggagtcc agcccctcct cctcagacc caggagtcca gacccccag cccctcctcc 960
 ctcagaccca ggggtccagg cccccaaccc ctcctccctc agactcagag gtccaagccc 1020
 ccaaccntc attccccaga cccagaggtc ccaggtccag cccctctccc ctcagaccca 1080
 gcggtccaat gccacctaga ctntccctgt acacagtgcc ccttgtggc acgttgacc 1140
 aacctacca gttgggtttt catttttngt ccctttcccc tagatccaga aataaagttt 1200
 aagagaagng caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 1248

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1) ... (159)

<223> Xaa = Any Amino Acid

<400> 172

Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro
 1 5 10 15
 Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser
 20 25 30
 Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr
 35 40 45
 Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly

50 55 60
 Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu
 65 70 75 80
 Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe
 85 90 95
 Cys Ala Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser
 100 105 110
 Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe
 115 120 125
 Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn
 130 135 140
 Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 145 150 155

<210> 173

<211> 1265

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1265)

<223> n = A,T,C or G

<400> 173

```

ggcagcccgcc actcgagcc ctggcaggcg gcaactgggtca tggaaaacga attgttctgc      60
tcgggcgtcc tgggtgcatcc gcagtgggtg ctgtcagccg cacactgttt ccagaactcc      120
tacaccatcg ggctgggect gcacagtctt gaggccgacc aagagccagg gagccagatg      180
gtggaggcca gectctccgt acggcaccga gactacaaca gacccttgct cgctaaccgac      240
ctcatgctca tcaagttgga cgaatccgtg tccgagtcg acaccatccg gagcatcagc      300
attgtctcgc agtgccttac cgcggggaac tcttgccctg tttctggctg gggctctgctg      360
gcgaacggtg agctcacggg tgtgtgtctg cctcttcaa ggaggctctc tgcccagtcg      420
cgggggctga cccagagctc tgcgtcccag gcagaatgcc taccgtgctg cagtgcgtga      480
acgtgtcggt ggtgtctgag gaggtctgca gtaagctcta tgaccgctg taccacccca      540
gcatgttctg cgccggcgga gggcaagacc agaaggactc ctgcaacggt gactctgggg      600
ggcccctgat ctgcaacggg tacttgagg gccttggtc tttcggaaaa gcccctgtg      660
gccaaagttg cgtgccaggt gtctacacca acctctgcaa attcactgag tggatagaga      720
aaaccgtcca ggccagttaa ctctggggac tgggaaccca tgaaattgac ccccaaatac      780
atcctgcgga aggaattcag gaatatctgt tcccagcccc tctcctccta ggcccaggag      840
tccaggcccc cagccctcc tccctcaaac caagggtaca gatccccagc cctcctccc      900
tcagaccag gagtccagac ccccagccc ctctccctc agaccagga gtccagcccc      960
tcctccntca gaccagagg tccagacccc ccagccctc ctccctcaga cccaggggt      1020
gaggcccca acccctctc cttcagagtc agagggtcaa gcccacaacc cctcgttccc      1080
cagaccaga ggttnaggtc ccagccctc ttcctcaga cccagnggtc caatgccacc      1140
tagattttcc ctgnacacag tgccccttg tggngngttg acccaacctt accagttggt      1200
ttttcatttt tngtccctt cccctagatc cagaaataaa gtttaagaga ngngcaaaaa      1260
aaaaa                                         1265
  
```

<210> 174

<211> 1459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1459)

<223> n = A,T,C or G

<400> 174
 ggtagccgc acactgtttc cagaagttag tgcagagctc ctacaccatc gggctgggccc 60
 tgcacagtct tgaggccgac caagagccag ggagccagat ggtggaggcc agcctctccg 120
 tacggcacc agagtacaac agacccttgc tcgctaacga cctcatgtc atcaagttag 180
 acgaatccgt gtccgagtct gacaccatcc ggagcatcag cattgtctcg cagtgcctta 240
 ccgcggggaa ctcttgccct gtttctggct ggggtctgct ggcgaacggt gagctcacgg 300
 gtgtgtgtct gccctcttca aggaggctct ctgcccagtc gcgggggctg acccagagct 360
 ctgcgtccca ggcagaatgc ctaccgtgct gcagtgcgtg aacgtgtcgg tgggtgtctga 420
 ngaggctctg antaagctct atgaccctgt gtaccacccc ancatgttct gcgcggcg 480
 aggcaagac cagaaggact cctgcaacgt gagagagggg aaaggggagg gcaggcgact 540
 cagggaaggg tggaagagg ggagacagag acacacaggg ccgcatggcg agatgcagag 600
 atggagagac acacagggag acagtgaaca cttagagag aaactgagag aaacagagaa 660
 ataaacacag gaataaagag aagcaaagga agagagaac agaaacagac atggggaggc 720
 agaaacacac acacatagaa atgcagtga ccttccaaca gcatggggcc tgaggggcgt 780
 gacctccacc caatagaaaa tcctcttata acttttgact ccccaaaaac ctgactagaa 840
 atagcctact gttgacgggg agccttacca ataacataaa tagtcgattt atgcatacgt 900
 tttatgcatt catgatatac cttgttgga attttttgat atttctaagc tacacagttc 960
 gtctgtgaat ttttttaaat tgggtcaact ctccataaat tttctgatg tgtttattga 1020
 aaaaatccaa gtataagtg acttggtcat tcaaaccagg gttgttcaag ggtcaactgt 1080
 gtaccagag ggaacagtg acacagattc atagagtgga aacacgaaga gaaacaggaa 1140
 aatcaagac tctacaaaga ggctggcgag ggtggctcat gcctgtaac ccagcacttt 1200
 gggaggcgag gcaggcagat cacttgaggg aaggagtcca agaccagcct ggcctaaatg 1260
 gtgaaatcct gtctgtacta aaaatacaaa agttagctgg atatggtggc aggcgcctgt 1320
 aatccagct acttgggagg ctgaggcagg agaattgctt gaatatggga ggcagaggtt 1380
 gaagtgaatt gagatcacac cactatactc cagctggggc aacagagtaa gactctgtct 1440
 caaaaaaaaa aaaaaaaaaa 1459

<210> 175
 <211> 1167
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (1167)
 <223> n = A,T,C or G

<400> 175
 gcgcagccct ggcaggcgcc actgggtcatg gaaaacgaat tgttctgtc gggcgctctg 60
 gtgcatccgc agtgggtgct gtcagccgca cactgtttcc agaactccta caccatcggg 120
 ctgggcctgc acagtcttga ggcggaccaa gagccaggga gccagatggt ggaggccagc 180
 ctctccgtac ggcacccaga gtacaacaga ctcttgtctg ctaacgacct catgctcatc 240
 aagttggagc aatccgtgtc cgagtctgac accatccgga gcatcagcat tgcttcgcag 300
 tgccctaccg cggggaactc ttgcctcgtn tctggctggg gtctgtggc gaacggcaga 360
 atgcctaccg tgctgcactg cgtgaacgtg tcggtgggtg ctgaggangt ctgcagtaag 420
 ctctatgacc cgctgtacca cccagcatg ttctgcgccc gcggagggca agaccagaag 480
 gactcctgca acggtgactc tggggggccc ctgacttgca acgggtactt gcagggcctt 540
 gtgtctttcg gaaaagcccc gtgtggccaa cttggcgtgc caggtgtcta caccaacctc 600
 tgcaaatcca ctgagtggat agagaaaacc gtccagncca gttactctg gggactggga 660
 acccatgaaa ttgaccccca aatacatcct gcggaangaa ttcaggaata tctgttccca 720
 gcccctcctc cctcaggccc aggagtccag gccccagcc cctcctccct caaaccaagg 780
 gtacagatcc ccagcccctc ctccctcaga cccaggagtc cagaccccc agccccctnt 840
 ccntcagacc caggagtcca gcccctcctc cntcagacgc aggagtccag acccccagc 900
 ccntctccg tcagaccagc ggggtcaggc ccccaacccc tcntcntca gagtccagg 960
 tccaagcccc caaccctcg ttccccagac ccagaggtnc aggtcccagc cctcctccc 1020
 tcagaccagc cgggtccaatg ccacctagan tntcctgtta cacagtgcct ccttgtggca 1080
 ngttgaccca accttaccag ttggtttttc attttttgtc ctttccct agatccagaa 1140
 ataaagtnta agagaagcgc aaaaaaa 1167

<210> 176
 <211> 205
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(205)
 <223> Xaa = Any Amino Acid

<400> 176
 Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1 5 10 15
 Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20 25 30
 Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35 40 45
 Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50 55 60
 Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65 70 75 80
 Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85 90 95
 Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
 100 105 110
 Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
 115 120 125
 Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
 130 135 140
 Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
 145 150 155 160
 Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
 165 170 175
 Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
 180 185 190
 Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
 195 200 205

<210> 177
 <211> 1119
 <212> DNA
 <213> Homo sapien

<400> 177
 ggcactcgc agccctggca ggcggcactg gtcattgaaa acgaattggt ctgctcgggc 60
 gtccctgggc atccgcagtg ggtgctgtca gccgcacact gttccagaa ctctacacc 120
 atcgggctgg gctgcacag tcttgaggcc gaccaagagc caggagacca gatgggtggag 180
 gccagcctct ccgtacggca cccagagtac aacagaccct tgctcgctaa cgacctcatg 240
 ctcacaaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct 300
 tcgcagtgcc ctaccgcggg gaactcttgc ctggtttctg gctgggggtc gctggcgaac 360
 gatgctgtga ttgccatcca gtccagact gtgggaggct gggagtgtga gaagctttcc 420
 caaccctggc aggggtgtac catttcggca acttccagtg caaggacgtc ctgctgcac 480
 ctccactggg gctcactact gctcactgca tcaccggaa cactgtgatc aactagccag 540
 caccatagtt ctccgaagtc agactatcat gattactgtg ttgactgtgc tgtctattgt 600
 actaaccatg ccgatgttta ggtgaaatta gcgtcacttg gcctcaacca tcttggtatc 660
 cagttatcct cactgaattg agatttctg cttcagtgtc agccattccc acataatttc 720
 tgacctacag aggtgagggg tcatatagct cttcaaggat gctggtactc cctcacaac 780

```

ttcattttctc ctgttgtagt gaaaggtgcg cctctgtagg cctcccaggg tgggtgtgca      840
ggtcacaatg atgaatgtat gatcgtgttc ccattaccca aagcctttaa atccctcatg      900
ctcagtacac cagggcaggt ctagcatttc ttcatttagt gtatgctgct cattcatgca      960
accacctcag gactcctgga ttctctgctt agttgagctc ctgcatgctg cctccttggg     1020
gaggtgaggg agagggccca tggttcaatg ggatctgtgc agttgtaaca cattaggtgc     1080
ttaataaaca gaagctgtga tgtaaaaaaa aaaaaaaaaa     1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(164)

<223> Xaa = Any Amino Acid

<400> 178

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1          5          10          15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20          25          30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35          40          45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
 50          55          60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65          70          75          80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85          90          95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100          105          110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115          120          125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130          135          140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145          150          155          160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

```

ctggagtgcc ttggtgtttc aagcccctgc aggaagcaga atgcaccttc tgaggcacct      60
ccagctgccc ccggccgggg gatcgaggc tcggagcacc cttgcccggc tgtgattgct     120
gccaggcact gttcatctca gcttttctgt ccttttctc ccggcaagcg cttctgctga     180
aagttcatat ctggagcctg atgtcttaac gaataaaggt cccatgctcc acccgaaaaa     240
aaaaaaaaa

```

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180
 actagtccag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca 60
 tcacccagac cccgcccctg cccgtgcccc acgctgctgc taacgacagt atgatgetta 120
 ctctgtact cggaaactat ttttatgtaa ttaatgtatg ctttcttggt tataaatgcc 180
 tgatttaaaa aaaaaaaaaa aa 202

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (558)

<223> n = A,T,C or G

<400> 181
 tccytttgkt naggtttkkg agacamccck agacctwaan ctgtgtcaca gacttcyngg 60
 aatgtttagg cagtgcctagt aatttcytcg taatgattct gttattactt tcctnattct 120
 ttattcctct ttcttctgaa gattaatgaa gttgaaaatt gaggtggata aatacaaaaa 180
 ggtagtgtga tagtataagt atctaagtgc agatgaaagt gtgttatata tatccattca 240
 aaattatgca agttagtaat tactcagggt taactaaatt actttaatat gctgttgaaac 300
 ctactctggt ccttggctag aaaaaattat aaacaggact ttgttagttt gggaagccaa 360
 attgataata ttctatgttc taaaagtgtg gctatacata aattattaag aaatatggaw 420
 ttttattccc aggaatatgg kggttcatttt atgaatatta cscrggatag awgtwtgagt 480
 aaaaycagtt ttggtwaata ygtwaatatg tcmtaaataa acaakgcttt gacttatttc 540
 caaaaaaaaa aaaaaaaaaa 558

<210> 182

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (479)

<223> n = A,T,C or G

<400> 182
 acagggwttk grggatgcta agsccccrga rwtggttga tccaaccctg gcttwttttc 60
 agaggggaaa atggggccta gaagttacag mscatytagy tgggtgcgmg gacccctgg 120
 cstcacacag astcccgagt agctgggact acaggcacac agtcactgaa gcaggccctg 180
 ttwgcaattc acgttgccac ctccaactta aacattcttc atatgtgatg tccttagtca 240
 ctaagggttaa actttccac ccagaaaagg caacttagat aaaatcttag agtactttca 300
 tactmttcta agtctcttc cagcctcact kkgagtcctm cytgggggtt gataggaant 360
 ntctcttggc tttctcaata aartctctat ycatctcatg ttttaatttg tacgcatara 420
 awtgstgara aaattaaaat gttctggtty mactttaaaa aaaaaaaaaa aaaaaaaaaa 479

<210> 183

<211> 384

<212> DNA

<213> Homo sapien

<400> 183
 aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactggtgcc 60
 agtaccagta ccaataacag tgccagtgcc agtgccagca ccagtgggtg cttcagtgtc 120
 ggtgccagcc tgaccgccac tctcacattt gggctcttcg ctggccttgg tggagctggt 180
 gccagcacca gtggcagctc tgggtgcctgt ggtttctcct acaagtgaga ttttagatat 240

```

tggttaatcct gccagtcctt ctcttcaagc cagggtgcat cctcagaaac ctactcaaca 300
cagcactcta ggcagccact atcaatcaat tgaagttgac actctgcatt aratctattt 360
gccatttcaa aaaaaaaaaa aaaa 384

```

```

<210> 184
<211> 496
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(496)
<223> n = A,T,C or G

```

```

<400> 184
accgaattgg gaccgctggc ttataagcga tcatgttynt ccrgtatcac ctcaacgagc 60
agggagatcg agtcctatcg ctgaagaaat ttgacccgat gggacaacag acctgctcag 120
cccatcctgc tcggttctcc ccagatgaca aatactctsg acaccgaatc accatcaaga 180
aacgcttcaa ggtgctcatg acccagcaac cgcgcctgt cctctgaggg tcccttaaac 240
tgatgtcttt tctgccacct gttacccctc ggagactccg taaccaaact ctccggactg 300
tgagccctga tgcctttttg ccagccatac tctttggcat ccagtctctc gtggcgattg 360
attatgcttg tgtgaggcaa tcatggtggc atcacccata aagggaacac atttgacttt 420
ttttctcat attttaatt actacmagaw tattwmagaw waaatgawtt gaaaaactst 480
taaaaaaaaa aaaaaa 496

```

```

<210> 185
<211> 384
<212> DNA
<213> Homo sapien

```

```

<400> 185
gctggtagcc tatggcgkgg cccacggagg ggctcctgag gccacggrac agtgacttcc 60
caagtatcyt ggcsgcgctc ttctaccgtc cctaccgtga gatcttcggg cagattcccc 120
aggaggacat ggacgtggcc ctcatggagc acagcaactg ytcgtcggag cccggcttct 180
gggcacacc cctcggggcc caggcgggca cctgcgtctc ccagtatgcc aactggctgg 240
tggtgctgct cctcgtcatc ttctgctcgt tggccaacat cctgctggtc aactgctca 300
ttgccatgtt cagttacaca ttcggcaaag tacagggcaa cagcgatctc tactgggaag 360
gcgacgcgtt accgcctcat ccgg 384

```

```

<210> 186
<211> 577
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(577)
<223> n = A,T,C or G

```

```

<400> 186
gagttagctc ctccacaacc ttgatgaggt cgtctgcagt ggctctcgc ttcataccgc 60
tnccatcgct atactgtagg tttgccacca cytcctggca tcttggggcg gcntaatatt 120
ccaggaaact ctcaatcaag tcaccgtcga tgaaacctgt gggctgggtc tgtcttcgcg 180
tcggtgtgaa aggatctccc agaaggagtg ctcgatcttc cccacacttt tgatgacttt 240
attgagtoga ttctgcatgt ccagcaggag gttgtaccag ctctctgaca gtgaggtcac 300
cagccctatc atgcccgttg mcgtgccgaa garcaccgag ccttgtgtgg gggkkgaagt 360
ctcaccaga ttctgcatta ccagagagcc gtggcaaaag acattgacaa actcgcccag 420
gtggaaaaag amcamctcct ggargtgctn gcgcctctc gtcmggttgg ggcagcgctw 480

```

tccttttgac acacaaacaa gttaaaggca ttttcagccc ccagaaantt gtcacatcc 540
aagatntcgc acagcactna tccagtggg attaaat 577

<210> 187
<211> 534
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(534)
<223> n = A,T,C or G

<400> 187
aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgstg agaaticatw 60
actkggaaaa gmaacattaa agcctggaca ctggtattaa aattcacaat atgcaacact 120
ttaaacagtg tgtcaatctg ctcccyynac tttgtcatca ccagtctggg aakaagggtg 180
tgccctattc acacctgtta aaagggcgct aagcattttt gattcaacat cttttttttt 240
gacacaagtc cgaaaaaagc aaaagtaaac agttatyaat ttgttagcca attcacttct 300
ttcatgggac agagccatyt gatttaaaaa gcaattgca taatattgag ctttgggagc 360
tgatatttga gcggaagagt agcctttcta cttcaccaga cacaactccc ttcatattg 420
ggatgttnac naaagtwatg tctctwacag atgggatgct tttgtggcaa ttctgttctg 480
aggatctccc agtttattta ccacttgac aagaaggcgt tttcttcctc aggc 534

<210> 188
<211> 761
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(761)
<223> n = A,T,C or G

<400> 188
agaaaccagt atctctnaaa acaacctctc ataccttggt gacctaatth ttgtgctgtg 60
tgtgtgtgct cgcataattat atagacaggc acatcttttt tacttttgta aaagcttatg 120
cctcttttgt atctatatct gtgaaagttt taatgatctg ccataatgtc ttggggacct 180
ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240
tttattcgac atgaaggaaa tttccagatn acaacactna caaactctcc ctkgackarg 300
ggggacaaaag aaaagcaaaa ctgamcataa raaacaatwa cctggtgaga arttgcataa 360
acagaaaatwr ggtagtatat tgaarnacag catcattaaa rmgttwtktt wttctccctt 420
gcaaaaaaca tgtacngact tcccggtgag taatgccaaag ttgttttttt tatnataaaa 480
cttgccttct attacatggt tnaaagtggg gtggtgggccc aaaatattga aatgatggaa 540
ctgactgata aagctgtaca aataagcagt gtgcctaaca agcaacacag taatgttgac 600
atgcttaatt cacaaatgct aatttcatta taaatgtttg ctaaaatata ctttgaacta 660
ttttctgtgn ttcccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac 720
gaaaataata acattgaaga aaananaaa aanaaaaaa a 761

<210> 189
<211> 482
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

<400> 189
 tttttttttt tttgccgatn ctactatttt attgcaggan gtgggggtgt atgcaccgca 60
 caccggggct atnagaagca agaaggaagg agggagggca cagccccttg ctgagcaaca 120
 aagccgcctg ctgccttctc tgtctgtctc ctgggtgcagg cacatgggga gaccttcccc 180
 aaggcagggg ccaccagtcc aggggtggga atacaggggg tgggagtgtg gcataagaag 240
 tgataggcac aggccaccgc gtacagaccc ctccggtcct gacaggtnga tttcgaccag 300
 gtcattgtgc cctgccagg cacagcgtan atctggaaa gacagaatgc tttccttttc 360
 aaatttggt ngcatngaa ngggcanttt tccaantng gctnngtctt ggtacncttg 420
 gtccggccca gtcnccgtc caaaaantat tcaccnct ccnaattgct tgcngnccc 480
 cc 482

<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (471)

<223> n = A,T,C or G

<400> 190
 tttttttttt ttttaaaaca gtttttcaca aaaaattta ttagaagaat agtgggtttg 60
 aaaactctcg catccagtga gaactacat acaccacatt acagctngga atgtntctca 120
 aatgtctggg caaatgatac aatggaacca ttcaatctta cacatgcacg aaagaacaag 180
 cgcttttgac atacaatgca caaaaaaaa aggggggggg gaccacatgg attaaaaatt 240
 taagtactca tcacatacat taagacacag ttctagtcca gtcnaaaatc agaactgcnt 300
 tgaaaaattt catgtatgca atccaaccaa agaacttnat tggtagatcat gantnctcta 360
 ctacatcnac cttgatcatt gccaggaacn aaaagttinaa ancacncngt acaaaaanaa 420
 tctgtaattn anttcaacct ccgtacngaa aaatntntt tatacactcc c 471

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (402)

<223> n = A,T,C or G

<400> 191
 gagggattga aggtctgttc tastgtcggm ctgttcagcc accaactcta acaagttgct 60
 gtcttccact cactgtctgt aagcttttta acccagacwg tatcttcata aatagaacaa 120
 attcttcacc agtcacatct tctaggacct ttttgatc agttagtata agctcttcca 180
 ctctcttgt taagacttca tctggtaaag tcttaagtgt ttagaagg aattyaattg 240
 ctctgtctct aacaatgtcc tctccttgaa gtatttggt gaacaacca cctaaagtcc 300
 ctttgtgcat ccattttaaa tatacttaat agggcattgk tncactaggt taaattctgc 360
 aagagtcatc tgtctgcaaa agttgcgtta gtatatctgc ca 402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (601)

<223> n = A,T,C or G

<400> 192

```

gagctcggat ccaataatct ttgtctgagg gcagcacaca tatncagtgc catggnaact      60
ggtctacccc acatgggagc agcatgccgt agntatataa ggtcattccc tgagtcagac      120
atgcytyttt gaytaccgtg tgccaagtgc tgggtattct yaacacacyt ccatcccggt      180
cttttggtga aaaactggca cttktctgga actagcarga catcacttac aaattcacc      240
acgagacact tgaaagggtg aacaaagcga ytcttgcat gctttttgtc cctccggcac      300
cagttgtcaa tactaacccg ctggtttgcc tccatcacat ttgtgatctg tagctctgga      360
tacatctcct gacagtactg aagaacttct tcttttggtt caaaagcacc tcttggtgcc      420
tgttgatca ggttccatt tcccagtcyg aatgttcaca tggcatattt wacttccac      480
aaaaattgc gatttgaggc tcagcaacag caaatcctgt tccggcattg gctgcaagag      540
cctcgatgta gccggccagc gccaaaggcag gcgcgtgag cccaccagc agcagaagca      600
g

```

601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (608)

<223> n = A,T,C or G

<400> 193

```

atacagccca natcccacca cgaagatgcg cttgttgact gagaacctga tgcggtcact      60
ggtcccgtg tagccccagc gactctccac ctgctggaag cggttgatgc tgcactcytt      120
cccaacgcag gcagmagcgg gscgggtcaa tgaactccay tcgtggcttg gggtkgacgg      180
tkaagtgcag gaagaggctg accacctcgc ggtccaccag gatgcccgac tgtgcccggac      240
ctgcagcgaa actcctcgat ggtcatgagc ggaagcgaa tgaggcccag ggccttgccc      300
agaaccttcc gcctgttctc tggcgtcacc tgcagctgct gccgctgaca ctcggcctcg      360
gaccagcgga caaacggcrt tgaacagccg cactcaagg atgccagtg tgtecgctc      420
caggammgsc accagcgtgt ccaggtcaat gtcggtgaag cctccgcgg gtrattggcgt      480
ctgcagtggt tttgtcgatg ttctccagc acaggctggc cagctgcggg tcatcgaaga      540
gtcgcgctg cgtgagcagc atgaaggcgt tgtcggtcgc cagttcttct tcaggaactc      600
cacgcaat

```

608

<210> 194

<211> 392

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (392)

<223> n = A,T,C or G

<400> 194

```

gaacggctgg acctgctc gcattgtgct tgctggcagg gaataccttg gcaagcagyt      60
ccagtccgag cagecccaaga ccgtgcgc ccgaagctaa gcctgcctct ggcttcccc      120
tccgctcaa tgcagaacca gtagtgggag cactgtgttt agagttaaga gtgaacactg      180
tttgatttta cttgggaatt tctctgtta tatagctttt cccaatgcta atttccaaac      240
aacaacaaca aaataacatg tttgcctgtt aagttgtata aaagtaggtg attctgtatt      300
taaagaaaat attactgtta catatactgc ttgcaatttc tgtatttatt gktnctstgg      360
aaataaatat agttattaaa ggttgctcant cc

```

392

<210> 195
 <211> 502
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(502)
 <223> n = A,T,C or G

<400> 195
 ccsttkgagg ggktkaggkyc cagttyccga gtggaagaaa caggccagga gaagtgcgtg 60
 ccgagctgag gcagatgttc ccacagtac cccagagcc stgggstata gtytctgacc 120
 cctcncaagg aaagaccacs ttctggggac atgggctgga gggcaggacc tagaggcacc 180
 aagggaaggc cccattccgg ggstgttccc cgaggaggaa gggaaggggc tctgtgtgcc 240
 ccccasgagg aagaggccct gagtccctgg atcagacacc ccttcacgtg tatccccaca 300
 caaatgcaag ctcaccaagg tcccctctca gtccccttcc stacacctg amcggccact 360
 gscscacacc caccagagc acgccaccgg ccatggggar tgtgtcaag gartcgcngg 420
 gcarcgtgga catctngtcc cagaaggggg cagaatctcc aatagangga ctgarcmstt 480
 gctnanaaaa aaaaanaaaa aa 502

<210> 196
 <211> 665
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(665)
 <223> n = A,T,C or G

<400> 196
 ggttacttgg ttctattgcc accacttagt ggatgtcatt tagaaccatt ttgtctgctc 60
 cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt 120
 wagctgtttk gagttgatts gcaccactgc accacaact tcaatatgaa aacyawttga 180
 actwatttat tatcttgtga aaagtataac aatgaaaatt ttgttcatac tgtattkac 240
 aagtatgatg aaaagcaawa gatataat cttttattat gttaaattat gattgccatt 300
 attaatcggc aaaatgtgga gtgtatgttc ttttcacagt aatataatgcc ttttgaact 360
 tcaattgggt attttattgt aaatgarta caaaattcct aatttaagar aatggatgt 420
 watatttatt tcattaattt ctttcctkgt ttacgtwaat tttgaaaaga wtgcattgatt 480
 tcttgacaga aatcgatcct gatgctgtgg aagtagtttg acccacatcc ctatgagttt 540
 ttcttagaat gtataaagggt tgtagcccat cnaacttcaa agaaaaaat gaccacatac 600
 tttgcaatca ggctgaaatg tggcatgctn ttctaattcc aactttataa actagcaaan 660
 aagtg 665

<210> 197
 <211> 492
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(492)
 <223> n = A,T,C or G

<400> 197
 tttttttttt ttttttttgc aggaaggatt ccattttattg tggatgcatt ttcacaatat 60
 atgtttattg gagcgatcca ttatcagtga aaagtatcaa gtgtttataa natttttagg 120

```

aaggcagatt cacagaacat gctngtcngc ttgcagtttt acctcgtana gatnacagag 180
aattatagtc naaccagtaa acnaggaatt tacttttcaa aagattaaat ccaaactgaa 240
caaaattcta ccctgaaact tactccatcc aaatatgga ataanagtca gcagtgtac 300
attctcttct gaactttaga ttttctagaa aaatatgtaa tagtgatcag gaagagctct 360
tgttcaaaag tacaacnaag caatgttccc ttaccatagg ccttaattca aactttgatc 420
catttcactc ccatcacggg agtcaatgct acctgggaca cttgtatttt gttcatnctg 480
ancntggctt aa 492

```

<210> 198

<211> 478

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (478)

<223> n = A,T,C or G

<400> 198

```

ttntttttgm atttcantct gtannaanta ttttcattat gtttattana aaaatatnaa 60
tgtntccacn acaaatcatn ttacntnagt aagaggccan ctacattgta caacatacac 120
tgagtatatt ttgaaaagga caagtttaaa gtanacncat attgccganc atancacatt 180
tatacatggc ttgattgata ttttagcacag canaaactga gtgagttacc agaaanaaat 240
natatatgtc aatcngattt aagatacaaa acagatccta tggtagatan catcntgtag 300
gagttgtggc tttatgttta ctgaaagtca atgcagttcc tgtacaaaga gatggccgta 360
agcattctag tacctctact ccatggttaa gaatcgtaca cttatgttta catatgtnc 420
gggtaagaat tgtgttaagt naanttatgg agaggtccan gagaaaaatt tgatncaa 478

```

<210> 199

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (482)

<223> n = A,T,C or G

<400> 199

```

agtgacttgt cctccaacaa aacccttga tcaagtttgt ggcactgaca atcagaccta 60
tgctagtccc tgtcatctat tgcctactaa atgcagactg gaggggacca aaaaggggca 120
tcaactccag ctggattatt ttggagcctg caaatctatt cctacttgta cggactttga 180
agtgattcag tttcctctac ggatgagaga ctggctcaag aatatectca tgcagcttta 240
tgaagccnac tctgaacacg ctggttatct nagatgagaa ncagagaaat aaagtcnaga 300
aaatttacct ggangaaaag aggccttngg ctggggacca tcccattgaa ccttctctta 360
anggacttta agaanaaaact accacatgtn tgtngtatcc tgggtccngg ccgtttantg 420
aacntngacn ncacccttnt ggaatanant cttgacngcn tectgaactt gctcctctgc 480
ga 482

```

<210> 200

<211> 270

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (270)

<223> n = A,T,C or G

```

<400> 200
cggccgcaag tgcaactcca gctggggcgg tgcggacgaa gattctgcca gcagttgggc 60
cgactgcgac gacggcggcg gcgacagtcg caggtgcagc gcgggcgcct ggggtcttgc 120
aaggctgagc tgacgccgca gaggtcgtgt cacgtcccac gaccttgacg ccgtcgggga 180
cagccggaac agagcccggg gaangcggga ggccctcggg agccccctcg gaagggcggc 240
ccgagagata cgcaggtgca ggtggccgcc 270

```

```

<210> 201
<211> 419
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(419)
<223> n = A,T,C or G

```

```

<400> 201
tttttttttt ttttggaaac tactgcgagc acagcaggtc agcaacaagt ttatttttgc 60
gctagcaagg taacagggtg gggcatgggt acatgttcag gtcaacttcc ttgtcgtgg 120
ttgattggtt tgtctttatg ggggcggggg ggggtagggg aaancgaagc anaantaaca 180
tggagtgggt gcaccctccc tgtagaacct gggtacnaaa gcttggggca gttcacctgg 240
tctgtgaccg tcattttctt gacatcaatg ttattagaag tcaggatata ttttagagag 300
tcactgtnt ctggaggagg attagggttt cttgccana tccaancaa atccacntga 360
aaaagtggga tgatncangt acngaatacc ganggcatan ttctcatant cgggtggcca 419

```

```

<210> 202
<211> 509
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(509)
<223> n = A,T,C or G

```

```

<400> 202
tttntttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt 60
tggcacttaa tccattttta tttcaaaatg tctacaaant ttnaatncnc cattatacng 120
gtnattttnc aaaatctaaa nttattcaa atntnagcca aantccttac ncaaatnnaa 180
tacnncnaaa aatcaaaaat atacntntct ttcagcaaac ttngttacat aaattaaaaa 240
aataatacgy gctgggtgtt tcaaagtaca attatcttaa cactgcaaac atnttttnaa 300
ggaactaaaa taaaaaaaaa cactnccgca aaggttaaag ggaacaacaa attcntttta 360
caacancnnc nattataaaa atcatatctc aaatcttagg ggaatatata cttcacacng 420
ggatcttaac ttttactnca ctttgtttat ttttttanaa ccattgtntt gggcccaaca 480
caatggnaat nccnccnnc tggactagt 509

```

```

<210> 203
<211> 583
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(583)
<223> n = A,T,C or G

```


<400> 203

tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaatc	tgcctaaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaac	atccaaatcc	240
atttttcttg	tctttaaaat	tatctaattc	ttccattttt	tccctattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tattttctacc	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaag	aaggcttaga	tccttttatg	480
tccatttttag	tcactaaacg	atatcnaaag	tgccagaatg	caaaagggtt	gtgaacattt	540
attcaaaagc	taatataaga	tatttcacat	actcatcttt	ctg		583

<210> 204

<211> 589

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(589)

<223> n = A,T,C or G

<400> 204

ttttttttnt	tttttttttt	tttttttctc	ttcttttttt	ttganaatga	ggatcgagtt	60
tttctactctc	tagatagggc	atgaagaaaa	ctcatctttc	cagcttttaa	ataacaatca	120
aatctcttat	gctatatcat	attttaagtt	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaat	ctgttcattc	ttctcattca	tatagttata	tcaagtacta	ccttgcatat	240
tgagagggtt	ttcttctcta	tttacacata	tatttccatg	tgaatttgta	tcaaaccctt	300
attttcatgc	aaactagaaa	ataatgtnnt	cttttgcata	agagaagaga	acaatatnag	360
cattacaaaa	ctgctcaaat	tgtttgttaa	gnttatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacatttac	ngacnagcaa	taataaaact	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggacattt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattatt	ccntagccca	acacaatgg		589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(545)

<223> n = A,T,C or G

<400> 205

tttttntttt	ttttttcagt	aataatcaga	acaatattta	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaagttt	gtttctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttgagga	aaatacacca	aaatacatta	agtaaattat	180
ttaagatcat	agagcttgta	agtgaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggacttctt	gctttaattt	tgtgatgaat	300
atggggtgtc	actggtaaac	caacacattc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	gctanatnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aaggggcnga	ngaaatgagg	aagaaaagaa	aaggattacg	catactgttc	tttctatngg	480
aaggattaga	tatgtttcct	ttgccaatat	taaaaaata	ataatgttta	ctactagtga	540
aacc						545

<210> 206

<211> 487

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(487)
<223> n = A,T,C or G

<400> 206
 tttttttttt ttttttagtc aagtttctna tttttattat aattaaagtc ttggtcattt 60
 catttatttag ctctgcaact tacatattta aattaaagaa acgttnttag acaactgtna 120
 caatttataa atgtaagggt ccattattga gtanatatat tcctccaaga gtggatgtgt 180
 cccttctccc accaactaat gaancagcaa cattagttta attttatttag tagatnatac 240
 actgctgcaa acgctaattc tcttctccat ccccatgtng atattgtgta tatgtgtgag 300
 ttggttagaa tgcatacanca atctnacaat caacagcaag atgaagctag gcntgggctt 360
 tcggtgaaaa tagactgtgt ctgtctgaat caaatgatct gacctatcct cgggtggcaag 420
 aactcttoga accgcttctt caaaggcngc tgccacattt gtggcntctn ttgcacttgt 480
 ttcaaaa 487

<210> 207
<211> 332
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(332)
<223> n = A,T,C or G

<400> 207
 tgaattggct aaaagactgc atttttanaa ctagcaactc ttatttcttt cctttaaaaa 60
 tacatagcat taaatcccaa atcctattta aagacctgac agcttgagaa ggtcactact 120
 gcatttatag gaccttctgg tggttctgct gttacntttg aantctgaca atccttgana 180
 atcctttgcat gcagaggagg taaaagggtat tggattttca cagaggaana acacagcgca 240
 gaaatgaagg ggccaggctt actgagcttg tccactggag ggctcatggg tgggacatgg 300
 aaaagaaggc agcctaggcc ctggggagcc ca 332

<210> 208
<211> 524
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(524)
<223> n = A,T,C or G

<400> 208
 agggcggtgt gcggagggcg ttactgtttt gtctcagtaa caataaatac aaaaagactg 60
 gttgtgttcc ggccccatcc aaccacgaag ttgatttctc ttgtgtgcag agtgactgat 120
 tttaaaggac atggagcttg tcacaatgtc acaatgtcac agtgatgaagg gcacactcac 180
 tcccgcgtga ttacatttta gcaaccaaca atagctcatg agtccatact tgtaataact 240
 tttggcagaa tacttnttga aacttgcaga tgataactaa gatccaagat atttccaaa 300
 gtaaatagaa gtgggtcata atattaatta cctgttcaca tcagcttcca tttaacaagtc 360
 atgagcccag aactgacat caaactaagc ccacttagac tcctcaccac cagtctgtcc 420
 tgtcatcaga caggaggtgt tcaccttgac caaattctca ccagtcaatc atctatccaa 480
 aaaccattac ctgatccact tccggtaatg caccaccttg gtga 524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209
 gggtgaggaa atccagagtt gccatggaga aaattccagt gtcagcattc ttgtctcttg 60
 tggccctctc ctacactctg gccagagata ccacagtcaa acctggagcc aaaaaggaca 120
 caaaggactc tcgacccaaa ctgccccaga ccctctcca 159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(256)
 <223> n = A,T,C or G

<400> 210
 actccctggc agacaaaggc agaggagaga gctctgttag ttctgtgttg ttgaactgcc 60
 actgaatttc tttccacttg gactattaca tgccanttga gggactaatg gaaaaacgta 120
 tggggagatt ttanccaatt tangtntgta aatggggaga ctggggcagg cgggagagat 180
 ttgcagggtg naaatgggan ggctggtttg ttanatgaac agggacatag gaggtaggca 240
 ccaggatgct aaatca 256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(264)
 <223> n = A,T,C or G

<400> 211
 acattgtttt tttgagataa agcattgaga gagctctcct taacgtgaca caatggaagg 60
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gttaaggaga 180
 ggggagatac attcngaaag aggactgaaa gaaatactca agtnggaaaa cagaaaaaga 240
 aaaaaaggag caaatgagaa gcct 264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 212
 acccaaaaat ccaatgctga atatttggtt tcattattcc canattcttt gattgtcaaa 60
 ggatttaatg ttgtctcagc ttgggcactt cagttaggac ctaaggatgc cagccggcag 120
 gtttatatat cgacgaacaa tattcaagcg cgacaacagg ttattgaact tgcccgccag 180

```

ttnaatttca ttcccattga cttgggatcc ttatcatcag ccagagagat tgaaaattta      240
cccctacnac tctttactct ctgganaggg ccagtgggtg tagctataag cttggccaca      300
tttttttttc cttttattct ttgtcaga                                         328

```

<210> 213

<211> 250

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (250)

<223> n = A,T,C or G

<400> 213

```

acttatgagc agagcgacat atccnagtgt agactgaata aaactgaatt ctctccagtt      60
taaagcattg ctactgaag ggatagaagt gactgccagg agggaaagta agccaaggct      120
cattatgcca aagganatat acatttcaat tctccaaact tcttcctcat tccaagagtt      180
ttcaatattt gcatgaacct gctgataanc catgttaana aacaaatata tctctnacct      240
tctcatcggt                                         250

```

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (444)

<223> n = A,T,C or G

<400> 214

```

accagaatc caatgctgaa tatttggtt cattattccc agattctttg attgtcaaag      60
gatttaatgt tgtctcagct tgggcacttc agttaggacc taaggatgcc agccggcagg      120
tttatatatg cagcaacaat attcaagcgc gacaacaggt tattgaactt gcccgccagt      180
tgaatttcat tcccattgac ttgggatcct tatcatcagc canagagatt gaaaatttac      240
ccctacgact ctttactctc tggagagggc cagtgggtgt agctataagc ttggccacat      300
ttttttttcc tttattcctt tgcagagat gcgattcatc catatgctan aaaccaacag      360
agtgactttt acaaaattcc tataganatt gtgaataaaa ccttacctat agttggcatt      420
actttgctct ccctaataata cctc                                         444

```

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (366)

<223> n = A,T,C or G

<400> 215

```

acttatgagc agagcgacat atccaagtgt anactgaata aaactgaatt ctctccagtt      60
taaagcattg ctactgaag ggatagaagt gactgccagg agggaaagta agccaaggct      120
cattatgcca aagganatat acatttcaat tctccaaact tcttcctcat tccaagagtt      180
ttcaatattt gcatgaacct gctgataagc catgttgaga aacaaatata tctctgacct      240
tctcatcggt aagcagaggc tgtaggcaac atggaccata gcgaanaaaa aacttagtaa      300
tccaagctgt tttctacact gtaaccaggt ttccaaccaa ggtggaaatc tctatactt      360

```

ggtgcc

366

<210> 216
 <211> 260
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccac tgcangaggg agggccgggc caggagaatc tccgcttgtc 60
 caagacaggg gcctaaggag ggtctccaca ctgctnntaa gggctntnc attttttat 120
 taataaaaag tnnaaaaggc ctcttctcaa cttttttccc ttnggctgga aaatttaaaa 180
 atcaaaaatt tcctnaagtt ntcaagctat catatatact ntatcctgaa aaagcaacat 240
 aattcttctt tccctccttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60
 tcttgccat aattttctat ttttaataagg aaatagcaaa ttgggggtggg gggaatgtag 120
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tatgtctcta gagtagattt ataattagcc acttacccta 240
 atatccttca tgcttgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(205)
 <223> n = A,T,C or G

<400> 218
 accaaggtgg tgcattaccg gaantggatc aangacacca tegtggccaa cccctgagca 60
 cccctatcaa ctcccttttg tagtaaaactt ggaaccttgg aaatgaccag gccaagactc 120
 aggcctcccc agttctactg acctttgtcc ttangntna ngccagggt tgctaggaaa 180
 anaaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219

tactgttttg tctcagtaac aataaataca aaaagactgg ttgtgttccg gccccatcca 60
accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tgga 114

<210> 220
<211> 93
<212> DNA
<213> Homo sapien

<400> 220
actagccagc aaaaaaggca gggtagcctg aattgcttct tgctctttac atttctttta 60
aaataagcat ttagtgctca gtccctactg agt 93

<210> 221
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (167)
<223> n = A,T,C or G

<400> 221
actangtgca ggtgcgcaca aatatttgtc gatattccct tcatcttgga ttccatgagg 60
tcttttgccc agcctgtggc tctactgtag taagtctctg ctgatgagga gccagnatgc 120
ccccactac ctccctgac gctccccana aatcacccaa cctctgt 167

<210> 222
<211> 351
<212> DNA
<213> Homo sapien

<400> 222
agggcgtggt gcgaggggcg gtactgacct ctagtagtag aggatgcatt ctggcacccc 60
gttcttcacc tgtcccccaa tccttaaaag gccatactgc ataaagtcaa caacagataa 120
atgtttgctg aattaaagga tggatgaaaa aaattaataa tgaatttttg cataatccaa 180
ttttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaatcttt 240
taggtgagca tgattagaga gcttgtaggt tgcttttaca tatatctggc atatttgagt 300
ctcgtatcaa aacaatagat tggtaaaggt ggtattattg tattgataag t 351

<210> 223
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (383)
<223> n = A,T,C or G

<400> 223
aaaacaaaca acaaaaaaaaa acaattcttc attcagaaaa attatcttag ggactgatat 60
tggttaattat ggtcaattta atwrttrtkt ggggcatttc cttacattgt cttgacaaga 120
ttaaaatgtc tgtgccaaaa ttttgatttt tatttgagga cttcttatca aaagtaatgc 180
tgccaaagga agtctaagga attagtagtg ttcccmtcac ttggttgagg tgtgctattc 240
taaaagattt tgatttctct gaatgacaat tatattttaa ctttggtggg ggaaanagtt 300
ataggaccac agtcttctact tctgatactt gtaaattaat cttttattgc acttgttttg 360
accattaagc tatatgttta aaa 383

<210> 224
 <211> 320
 <212> DNA
 <213> Homo sapien

<400> 224
 cccctgaagg cttcttggtta gaaatagta cagttacaac caataggaac aacaaaaaga 60
 aaaagtttgt gacattgttag tagggagtggt gtaccctta ctccccatca aaaaaaaat 120
 ggatacatgg ttaaaggata raagggcaat atttatcat atgttctaaa agagaaggaa 180
 gagaaaatac tactttctcr aaatggaagc ccttaaaggt gctttgatac tgaaggacac 240
 aaatgtggcc gtccatcctc ctttaragtt gcatgacttg gacacggtaa ctgttgagcgt 300
 tttaractcm gcattgtgac 320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225
 gaggactgca gcccgcactc gcagccctgg caggcggcac tggctcatgga aaacgaattg 60
 ttctgctcgg gcgtcctggt gcaccgcag tgggtgctgt cagccgcaca ctgtttccag 120
 aactcctaca ccatcgggct gggcctgcac agtcttgagg ccgaccaaga gccagggagc 180
 cagatggtgg aggccagcct ctccgtacgg caccagagat acaacagacc ctgtgctcgt 240
 aacgacctca tgctcatcaa gttggacgaa tccgtgtccg agtctgacac catccggagc 300
 atcagcattg cttcgcagtg ccctaccgcg gggaactctt gcctcgtttc tggctgggggt 360
 ctgctggcga acggcagaat gcctaccgtg ctgcagtgcg tgaacgtgtc ggtgggtgtct 420
 gaggaggtct gcagtaagct ctatgaccgg ctgtaccacc ccagcatgtt ctgcgcgggc 480
 ggaggggcaag accagaagga ctctgcaac ggtgactctg gggggccctt gatctgcaac 540
 gggtaacttg agggccttgt gtctttcgga aaagccccgt gtggccaagt tggcgtgcca 600
 ggtgtctaca ccaacctctg caaattcact gagtggatag agaaaaccgt ccaggccagt 660
 taactctggg gactgggaac ccatgaaatt gacccccaaa tacatcctgc ggaaggaatt 720
 caggaatatc tgttcccagc ccctcctccc tcaggcccag gagtccaggc cccagcccc 780
 tcctcctca aaccaagggt acagatcccc agccctcctt ccctcagacc caggagtcca 840
 gacccccag cccctcctcc ctccagacca ggagtcagc ccctcctccc tcagaccag 900
 gagtccagac ccccagccc ctctcctc agacccagg gtccaggccc ccaacccctc 960
 ctccctcaga ctccagaggtc caagccccca accctcctt cccagaccc agagggtccag 1020
 gtcccagccc ctctcctc agaccagcg gtccaatgcc acctagactc tcctgtaca 1080
 cagtgcctcc ttgtggcagc ttgacccaac cttaccagtt ggtttttcat tttttgtccc 1140
 tttcccctag atccagaaat aaagtctaag agaagcgcaa aaaaaaaaaa aaaaaaaaaa 1200
 aaaaaaaaaa aaaa 1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226
 acccagtatg tgcagggaga cggaacccca tgtgacagcc cactccacca gggttcccaa 60
 agaacctggc ccagtcataa tcattcatcc tgacagtggc aataatcacg ataaccagt 119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227
 acaattcata gggacgacca atgaggacag ggaatgaacc cggctctccc ccagccctga 60

tttttgctac	atatggggtc	ccttttcatt	ctttgcaaaa	acactggggt	ttctgagaac	120
acggacgggt	cttagcacia	tttgtgaaat	ctgtgtaraa	ccgggctttg	caggggagat	180
aattttcctc	ctctggagga	aaggtgggtga	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgctcggcct	tctctgaacc	aggatggaac	ggcagacccc	tgaaaacgaa	300
gcttgctccc	ttccaatcag	ccacttctga	gaacccccat	ctaacttctc	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaact	accatctaga	420
ggaaagggtg	caccctcagc	agagaagccg	agagcttaac	tctggtcggt	tccagagaca	480
acctgctggc	tgtcttgga	tgcgccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcatgagagg	600
gacaggctct	gccctcaagc	cggtctgagg	cagcaaccac	tctcctcccc	tttctcacgc	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagacccaaa	cagtttggtc	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acacccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

<210> 228

<211> 744

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgatcaagac	ccagaccacc	ccaggtctcc	ttcgtgggat	60
gtcatgacgt	ttgacatacc	tttggaaacga	gcctcctcct	tgggaagatgg	aagaccgtgt	120
tctgtggcga	cctggcctct	cctggcctgt	ttcttaagat	gctggatcac	atttcaatgg	180
taggaaaagt	ggcttcgtaa	aatagaagag	cagtcactgt	ggaactacca	aatggcgaga	240
tgctcgggtg	acattggggg	gctttgggat	aaaagattta	tgagccaact	attctctggc	300
accagattct	aggccagttt	gttccactga	agcttttccc	acagcagtc	acctctgcag	360
gctggcagct	gaatggcttg	ccggtggctc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaaggcta	ggatgcttgt	ctagtgttct	tagctgtcac	gctggctcct	tccaggttgg	480
ccagacgggtg	ttggccactc	ccttctaaaa	cacaggcgcc	ctcctgggtga	cagtgaccgg	540
ccgtgggtatg	ccttggecca	ttccagcagt	cccagttatg	catttcaagt	ttgggggttg	600
ttcttttctg	taatgttctc	ctgtgttgtc	agctgtcttc	atttctggg	ctaagcagca	660
ttgggagatg	tggaaccagag	atccactcct	taagaaccag	tggcgaaaga	cacttttctt	720
cttccactctg	aagtagctgg	tggt				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagctctggg	ttttgtctat	aaagtttgat	ccctcctttt	ctcatccaaa	tcatgtgaac	60
cattacacat	cgaaataaaa	gaaaggtggc	agacttgccc	aacgccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattattg	ttagaaacgt	caccacacagt	cctgtttaat	180
ttgtatgtga	cagccaactc	tgagaaggtc	ctatttttcc	acctgcagag	gatccagtct	240
cactaggctc	ctccttgccc	tcacactgga	gtctccgcca	gtgtgggtgc	ccactgacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

cagcagaaca	aatacaaata	tgaagagtgc	aaagatctca	taaaatctat	gctgaggaat	60
gagcgacagt	tcaaggagga	gaagcttgca	gagcagctca	agcaagctga	ggagctcagg	120
caatataaag	tcttggttca	cactcaggaa	cgagagctga	cccagtttaag	ggagaagttg	180
cggaaggga	gagatgcctc	cctctcattg	aatgagcctc	tccaggccct	cctcactccg	240
gatgaaccgg	acaagtccca	ggggcaggac	ctccaagaaa	cagacctcgg	ccgcgaccac	300
g						301

<210> 231
<211> 301
<212> DNA
<213> Homo sapien

<400> 231
gcaagcacgc tggcaaatct ctgtcaggtc agctccagag aagccattag tcatttttagc 60
caggaactcc aagtcacat ccttggcaac tggggacttg cgcaggttag ccttgaggat 120
ggcaacacgg gacttctcat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180
tctgaggatg gcaggatcaa tgatgtcagg ccggttggtta ccgccaatga tgaacacatt 240
tttttttggtg gacatgccat ccatttctgt caggatctgg ttgatgactc ggtcagcagc 300
c 301

<210> 232
<211> 301
<212> DNA
<213> Homo sapien

<400> 232
agtaggtatt tegtgagaag ttcaacacca aaactggaac atagtctctc ttcaagtgtt 60
ggcgacagcg gggcttctctg attctggaat ataactttgt gtaaattaac agccacctat 120
agaagagtc atctgctgtg aaggagagac agagaactct gggttccgtc gtctgtcca 180
cgtgctgtac caagtgtctg tgccagcctg ttacctgttc tcaatgaaa tctggctaata 240
gctcttgtgt atcacttctg attctgacaa tcaatcaatc aatggcctag agcactgact 300
g 301

<210> 233
<211> 301
<212> DNA
<213> Homo sapien

<400> 233
atgactgact tcccagtaag gctctctaag gggtaagtag gaggatccac aggatttgag 60
atgctaaggc cccagagatc gtttgatcca accctcttat ttccagaggg gaaaatgggg 120
cctagaagtt acagagcacc tagctgggtgc gctggcacc cctggcctcac acagactccc 180
gagtagctgg gactacaggg acacagtcac tgaagcaggg cctgttagca attctatgag 240
tacaattaa catgagatga gtagagactt tattgagaaa gcaagagaaa atcctatcaa 300
c 301

<210> 234
<211> 301
<212> DNA
<213> Homo sapien

<400> 234
aggctcctaca catcgagact catccatgat tgatatgaat ttaaaaatta caagcaaaga 60
cattttattc atcatgatgc tttcttttgt ttcttctttt cgttttcttc tttttctttt 120
tcaatttcag caacatactt ctcaatttct tcaggattta aaatcttgag ggattgatct 180
cgctcatga cagcaagttc aatgtttttg ccacctgact gaaccacttc caggagtggc 240
ttgatcacca gcttaatggt cagatcatct gcttcaatgg cttcgtcagt atagttcttc 300
t 301

<210> 235
<211> 283
<212> DNA
<213> Homo sapien

<400> 235
 tggggctgtg catcaggcgg gtttgagaaa tattcaattc tcagcagaag ccagaatttg 60
 aattccctca tcttttaggg aatcatttac caggtttga gaggattcag acagctcagg 120
 tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccaataaata 180
 atgttatctt tgaactgatg ctcataggag agaataaag aactctgagt gatatcaaca 240
 ttagggattc aaagaaatat tagatttaag ctacactgg tca 283

<210> 236

<211> 301

<212> DNA

<213> Homo sapien

<400> 236
 aggtcctcca ccaactgcct gaagcacggt taaaattggg aagaagtata gtgcagcata 60
 aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccagaagagg 120
 tcggagcagc atcattaata ccaagcagaa tgcgtaatag ataaatacaa tggatatag 180
 tgggtagacg gcttcatgag tacagtgtac tgtgggtatcg taatctggac ttgggttgta 240
 aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc 300
 a 301

<210> 237

<211> 301

<212> DNA

<213> Homo sapien

<400> 237
 cagtggtagt ggtgggtggac gtggcggttg tctgggtgcc ttttttggtg cccgtcacia 60
 actcaatttt tgttcgctcc tttttggcct ttccaattt gtccatctca attttctggg 120
 ccttggtctaa tgcctcatag taggagtcct cagaccagcc atggggatca aacatatcct 180
 ttgggtagtt ggtgccaaagc tcttcaatgg cacagaatgg atcagcttct cgtaaactca 240
 gggttccgaa attctttctt cctttggata atgtagtcca tatccattcc ctcttttate 300
 t 301

<210> 238

<211> 301

<212> DNA

<213> Homo sapien

<400> 238
 gggcagggtt tttttttttt ttttttgatg gtgcagaccc ttgctttatt tgtctgactt 60
 gttcacagtt cagccccctg ctcaaaaaac caacgggcca gctaaggaga ggaggaggca 120
 ccttgagact tccggagtcg aggtcttcca gggttcccca gcccatcaat cattttctgc 180
 accccctgcc tgggaagcag ctccctgggg ggtgggaatg ggtgactaga agggatttca 240
 gtgtgggacc caggggtctgt tcttcacagt agggagtgga agggatgact aatttcttta 300
 t 301

<210> 239

<211> 239

<212> DNA

<213> Homo sapien

<400> 239
 ataagcagct aggggaattct ttatttagta atgtcctaac ataaaagttc acataactgc 60
 ttctgtcaaa ccatgatact gagctttgtg acaaccaga aataactaag agaaggcaaa 120
 cataatacct tagagatcaa gaaacattta cacagttcaa ctgtttaaaa atagctcaac 180
 attcagccag tgagtagagt gtgaatgcca gcatacacag tatacaggtc cttcagggg 239

<210> 240

<211> 300
 <212> DNA
 <213> Homo sapien

<400> 240
 ggtcctaatag aagcagcagc ttccacattt taacgcaggt ttacgggtgat actgtccttt 60
 gggatctgcc ctccagtga accttttaag gaagaagtgg gcccaagcta agttccacat 120
 gctgggtgag ccagatgact tctgttcctt ggtcactttc ttcaatgggg cgaatggggg 180
 ctgccagggt tttaaaatca tgcttcactt tgaagcacac ggtcacttca cctctctcac 240
 gctgtgggtg tactttgatg aaaataccca ctttgttggc ctttctgaag ctataatgtc 300

<210> 241
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 241
 gaggtctggt gctgaggtct ctgggctagg aagaggagtt ctgtggagct ggaagccaga 60
 cctcttttga ggaaactcca gcagctatgt tgggtgtctct gagggaatgc aacaaggctg 120
 ctctccatg tattggaaaa ctgcaaactg gactcaactg gaaggaagtg ctgctgccag 180
 tgtgaagaac cagcctgagg tgacagaaac ggaagcaaac aggaacagcc agtcttttct 240
 tctctctctt gtcatacggg ctctctcaag catcctttgt tgcagggggc ctaaaaggga 300
 g 301

<210> 242
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 242
 ccgaggtcct gggatgcaac caatcactct gtttcacgtg actttttatca ccatacaatt 60
 tgtggcattt cctcattttc tacattgtag aatcaagagt gtaaataaat gtatatcgat 120
 gtcttcaaga atatatcatt cctttttcac tagaaccat tcaaaatata agtcaagaat 180
 cttaatatca acaaatatat caagcaaact ggaaggcaga ataactacca taatttagta 240
 taagtaccca aagttttata aatcaaaaagc cctaattgata accattttta gaattcaatc 300
 a 301

<210> 243
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 243
 aggtaagtcc cagtttgaag ctcaaaagat ctggtatgag cataggetca tcgacgacat 60
 ggtggcccaa gctatgaaat cagagggagg cttcatctgg gcctgtaaaa actatgatgg 120
 tgacgtgcag tcggactctg tggcccaagg gtatgggtct ctcggcatga tgaccagcgt 180
 gctggtttgt ccagatggca agacagtaga agcagaggct gccacggga ctgtaacccg 240
 tcactaccgc atgttcaga aaggacagga gacgtccacc aatcccattg cttccatttt 300
 t 301

<210> 244
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 244
 gctggtttgc aagaatgaaa tgaatgattc tacagctagg acttaacctt gaaatggaaa 60
 gtcattgcaat cccatttgca ggatctgtct gtgcacatgc ctctgtagag agcagcattc 120

ccaggacct tggaaacagt tgacactgta aggtgcttgc tccccaagac acatcctaaa 180
 aggtgttgta atgggtgaaaa cgtcttcctt ctttattgcc ctttcttatt tatgtgaaca 240
 actgtttgtc ttttgtgtat cttttttaaa ctgtaaagtt caattgtgaa aatgaatc 300

<210> 245
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 245
 gtctgagtat ttaaaatgtt attgaaatta tccccaacca atgtagaaa agaagaggt 60
 tatatactta gataaaaaat gaggtgaatt actatccatt gaaatcatgc tcttagaatt 120
 aaggccagga gatattgtca ttaatgtara cttcaggaca ctagagtata gcagccctat 180
 gttttcaaag agcagagatg caattaaata ttgttttagca tcaaaaaggc cactcaatac 240
 agctaataaa atgaaagacc taatttctaa agcaattctt tataattttac aaagttttaa 300
 g 301

<210> 246
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 246
 ggtctgtcct acaatgcctg cttcttgaaa gaagtcggca ctttctagaa tagctaaata 60
 acctgggctt attttaaaga actatttgta gctcagattg gttttcctat ggctaaaata 120
 agtgcttctt gtgaaaatta aataaaacag ttaattcaaa gccttgatat atgttaccac 180
 taacaatcat actaaatata ttttgaagta caaagtttga catgctctaa agtgacaacc 240
 caaatgtgtc ttacaaaaca cgttcctaac aaggtatgct ttacactacc aatgcagaaa 300
 c 301

<210> 247
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 247
 aggtcctttg gcagggtcga tggatcagag ctcaaactgg agggaaaggc atttcgggta 60
 gcctaagagg ggcactggcg gcagcacaac caaggaaggc aaggttggtt cccccacgct 120
 gtgtcctgtg ttcagggtcg acacacaatc ctcatgggaa caggatcacc catgcgctgc 180
 ccttgatgat caaggttggg gcttaagtgg attaaggag gcaagttctg gggtccttgc 240
 cttttcaaac catgaagtca ggctctgtat cctcctttt cctaactgat attctaacta 300
 a 301

<210> 248
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 248
 aggtccttgg agatgccatt tcagccgaag gactcttctw ttcggaagta caccctcact 60
 attaggaaga ttcttagggg taatttttct gaggaaggag aactagccaa cttaagaatt 120
 acaggaagaa agtgggttgg aagacagcca aagaaataaa agcagattaa attgtatcag 180
 gtacattcca gcctgtttgg aactccataa aaacatttca gattttaatc ccgaatttag 240
 ctaatgagac tggatttttg ttttttatgt tgtgtgtcgc agagctaaaa actcagttcc 300
 c 301

<210> 249
 <211> 301

<212> DNA

<213> Homo sapien

<400> 249

```

gtccagagga agcacctggt gctgaactag gcttgccctg ctgtgaactt gcacttggag      60
ccctgacgct gctgttctcc ccgaaaaaac cgaccgacct ccgcgatctc cgccccgccc      120
ccagggagac acagcagtga ctcagagctg gtcgcacact gtgcctccct cctcaccgcc      180
catcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggatggaaag      240
actgaatctt tgactcagaa ttgtttgctg aaaagaatga tgtgactttc ttagtcattt      300
a                                                                 301

```

<210> 250

<211> 301

<212> DNA

<213> Homo sapien

<400> 250

```

ggctctgtgac aaggacttgc aggctgtggg aggcaagtga cccttaacac tacacttctc      60
cttatcttta ttggcttgat aaacataatt atttctaaca ctagcttatt tccagttgcc      120
cataagcaca ctactacttt tctctggctg gaatagtaaa ctaaagtatg gtacatctac      180
ctaaaagact actatgtgga ataatacata ctaatgaagt attacatgat ttaaagacta      240
caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagatacat gattgaaacc      300
a                                                                 301

```

<210> 251

<211> 301

<212> DNA

<213> Homo sapien

<400> 251

```

gccgagggtcc tacatttggc ccagtttccc cctgcatect ctccaggggc cctgcctcat      60
agacaacctc atagagcata ggagaactgg ttgccctggg gccaggggga ctgtctggat      120
ggcaggggtc ctcaaaaatg ccactgtcac tgccaggaaa tgcttctgag cagtacacct      180
cattgggata aatgaaaagc ttcaagaaat cttcaggctc actctcttga aggcccgaa      240
cctctggagg ggggcagtgg aatcccagct ccaggacgga tctgtcgaa aagatatcct      300
c                                                                 301

```

<210> 252

<211> 301

<212> DNA

<213> Homo sapien

<400> 252

```

gcaaccaatc actctgtttc acgtgacttt tatcaccata caatttgtgg catttccctca      60
ttttctacat tgtagaatca agagtgtaaa taaatgtata tcgatgtctt caagaatata      120
tcattccttt ttcactagga acccattcaa aatataagtc aagaatctta atatcaacaa      180
atatatcaag caaactggaa ggcagaataa ctaccataat ttagtataag taccctaaagt      240
tttataaatc aaaagcccta atgataacca tttttagaat tcaatcatca ctgtagaatc      300
a                                                                 301

```

<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

```

ttccctaaga agatgttatt ttgttgggtt ttgtccccc tccatctcga ttctcgtacc      60
caactaaaaa aaaaaaataa agaaaaaatg tgtgcggttc tgaaaaataa ctccttagct      120

```

tggctcgatt gttttcagac cttaaaatat aaacttgttt cacaagcttt aatccatgtg 180
 gatttttttt cttagagaac cacaaaacat aaaaggagca agtcggactg aatacctgtt 240
 tccatagtgc ccacagggta ttccctcacat tttctccata ggaaaatgct ttttcccaag 300
 g 301

<210> 254
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 254
 cgctgcgcct ttcccttggg ggagggggcaa ggccagaggg ggtccaagtg cagcacgagg 60
 aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaaatcccc 120
 ccaaatctct tcattcttacc ctggtggact cctgactgta gaatttttg gttgaaacaa 180
 gaaaaaata aagctttgga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc 240
 acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgcc 300
 t 301

<210> 255
 <211> 302
 <212> DNA
 <213> Homo sapien

<400> 255
 agcttttttt tttttttttt tttttttttt ttcattaaaa aatagtgtc tttattataa 60
 attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacttggat 120
 tgggattttg ttgagttctt caagcatctc ctaataccct caagggcctg agtagggggg 180
 aggaaaaagg actggaggtg gaatctttat aaaaaacaag agtgattgag gcagattgta 240
 aacattatta aaaaacaaga aacaacaaa aaaatagaga aaaaaaccac cccaacacac 300
 aa 302

<210> 256
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (301)
 <223> n = A,T,C or G

<400> 256
 gttccagaaa acattgaagg tggtttccca aagtetaact agggatcccc cctctagcct 60
 aggaccttc tccccacacc tcaatccacc aaaccatcca taatgcaccc agataggccc 120
 acccccaaaa gcctggacac cttgagcaca cagttatgac caggacagac tcattctctat 180
 aggcaaatag ctgctggcaa actggcatta cctggtttgt ggggatgggg gggcaagtgt 240
 gtggcctctc ggctgggta gcaagaacat tcagggttagg cctaagttaa tcgtgttagt 300
 t 301

<210> 257
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 257
 gttgtggagg aactctggct tgctcattaa gtctactga ttttactat cccctgaatt 60
 tccccactta tttttgtctt tcactatcgc aggccttaga agaggtctac ctgctccag 120
 tcttacctag tccagtctac cccctggagt tagaatggcc atcctgaagt gaaaagtaat 180

gtcacattac tcccttcagt gattttctgt agaagtgcc atccctgaat gccaccaaga 240
 tcttaattct caccatctta atcttatctc ttgtactcct ctttacaccg gagaaggctc 300
 c 301

<210> 258

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 258

cagcagtagt agatgccgta tgccagcagc cccagcactc ccaggatcag caccagcacc 60
 aggggcccag ccaccaggcg cagaagcaag ataaacagta ggctcaagac cagagccacc 120
 cccaggggcaa caagaatcca ataccaggac tgggcaaaat cttcaaagat ctttaactctg 180
 atgtctcggg cattgaggct gtcaataana cgctgatccc ctgctgtatg gtggtgtcat 240
 tgggtgatccc tgggagcgcc ggtggagtaa cgttggtcca tggaaagcag cgcccacaac 300
 t 301

<210> 259

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 259

tcatatatgc aaacaaatgc agactangcc tcaggcagag actaaaggac atctcttggg 60
 gtgtcctgaa gtgatttgga cccctgaggg cagacaccta agtaggaatc ccagtgggaa 120
 gcaaagccat aaggaagccc aggattcctt gtgatcagga agtggggccag gaaggctctgt 180
 tccagctcac atctcatctg catgcagcac ggaccggatg cgcccaactg gtcttggctt 240
 ccttcccatc ttctcaagca gtgtccttgt tgagccattt gcaccccttg ctccagggtg 300
 c 301

<210> 260

<211> 301

<212> DNA

<213> Homo sapien

<400> 260

tttttttct ccctaaggaa aaagaaggaa caagtctcat aaaaccaa at aagcaatggt 60
 aaggtgtctt aacttgaaaa agattaggag tcaactggtt acaagttata attgaatgaa 120
 agaactgtaa cagccacagt tggccatttc atgccaatgg cagcaaaca caggattaac 180
 tagggcaaaa taaataagtg tgtggaagcc ctgataagtg cttaataaac agactgattc 240
 actgagacat cagtacctgc ccgggcggcc gctcgagccg aattctgcag atatccatca 300
 c 301

<210> 261

<211> 301

<212> DNA

<213> Homo sapien

<400> 261

aaatattcga gcaaactctg taactaatgt gtctccataa aaggctttga actcagtga	60
tctgcttcca tccacgattc tagcaatgac ctctcggaca tcaaagctcc tcttaagggt	120
agcaccaact attccataca attcatcagc aggaataaaa ggctcttcag aagggttcaat	180
ggtgacatcc aatttcttct gataatttag attcctcaca accttcctag ttaagtgaag	240
ggcatgatga tcatccaaag cccagtgggc acttactcca gactttctgc aatgaagatc	300
a	301

<210> 262

<211> 301

<212> DNA

<213> Homo sapien

<400> 262

gaggagagcc tgttacagca tttgtaagca cagaatactc caggagtatt tgtaattgtc	60
tgtgagcttc ttgcccgaag tctctcagaa atttaaaaag atgcaaacc ctgagtcacc	120
cctagacttc ctaaaccaga tctctgggg ctggaacctg gcactctgca tttgtaatga	180
gggctttctg gtgcacacct aattttgtgc atctttgcc taaatcctgg attagtccc	240
catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaaagaat	300
c	301

<210> 263

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 263

tttagcttgt ggtaaatgac tcacaaaact gattttaaaa tcaagttaat gtgaattttg	60
aaaattacta cttaatccta attcacaata acaatggcat taaggtttga cttgagttgg	120
ttcttagtat tatttatggt aaataggctc ttaccacttg caaataactg gccacatcat	180
taatgactga cttcccagta aggtctctta aggggtaagt angaggatcc acaggatttg	240
agatgctaag gccccagaga tcgtttgatc caaccctctt attttcagag gggaaaatgg	300
g	301

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

aaagacgtta aaccactcta ctaccacttg tggaactctc aaagggtaaa tgacaaaacc	60
aatgaatgac tctaaaaaca atatttacat ttaatgggtt gtagacaata aaaaaacaag	120
gtggatagat ctagaattgt aacattttta gaaaaccata scatttgaca gatgagaaag	180
ctcaattata gatgcaaagt tataactaaa ctactatagt agtaaagaaa tacatttcac	240
acccttcata taaattcact atcttggctt gaggcactcc ataaaatgta tcacgtgcat	300
a	301

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgcccaagtt atgtgtaagt gtatccgcac ccagaggtaa aactacactg tcattcttgt 60
 cttcttgtga cgcagtattt cttctctggg gagaagccgg gaagtcttct cctggctcta 120
 catattcttg gaagtctcta atcaactttt gttccatttg ttccatttct tcaggaggga 180
 ttttcagttt gtcaacatgt tctctaacaa cacttgccca tttctgtaa gaatccaaag 240
 cagtccaagg ctttgacatg tcaacaacca gcataactag agtatccttc agagatacgg 300
 c 301

<210> 266
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 266
 taccgtctgc ctttctccc atccaggcca tctgcgaatc tacatgggtc ctctattcg 60
 acaccagatc actctttcct ctaccacag gcttgctatg agcaagagac acaacctcct 120
 ctcttctgtg ttccagcttc ttttctgtt ctccccaccc ctttaagttct attcctgggg 180
 atagagacac caatacccat aacctctctc ctaagcctcc ttataacca ggggtgcacag 240
 cacagactcc tgacaactgg taaggccaat gaactgggag ctcacagctg gctgtgcctg 300
 a 301

<210> 267
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 267
 aaagagcaca ggccagctca gcctgccctg gccatctaga ctcagcctgg ctccatgggg 60
 gttctcagtg ctgagtcct ccaggaaaag ctcacctaga cctctgagg ctgaatcttc 120
 atcttcacag gcagcttctg agagcctgat attcctagcc ttgatgggtc ggagtaaagc 180
 ctcattctga ttctctcct tcttttctt caagttggct ttcctcacat cctctgttc 240
 aattcgcttc agcttgtctg ctttagcct catttcaga agcttcttct ctttggcatc 300
 t 301

<210> 268
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 268
 aatgtctcac tcaactactt cccagcctac cgtggcctaa ttctgggagt tttcttctta 60
 gatcttggga gagctggttc ttctaaggag aaggaggaag gacagatgta actttggatc 120
 tcgaagagga agtctaattg aagtaattag tcaacggtcc ttgtttagac tcttgggaata 180
 tgctgggtgg ctcagtgagc ccttttggag aaagcaagta ttattcttaa ggagtaacca 240
 cttccattg ttctacttcc taccatcatc aattgtatat tatgtattct ttggagaact 300
 a 301

<210> 269
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 269
 taacaatata cactagctat ctttttaact gtccatcatt agcaccaatg aagattcaat 60
 aaaattacct ttattcacac atctcaaaac aattctgcaa attcttagtg aagtttaact 120
 atagtcacag accttaataa ttacattgt tttctatgtc tactgaaaat aagttcacta 180
 cttttctgga tattctttac aaaatcttat taaaattcct ggtattatca cccccaatta 240
 tacagtagca caaccacett atgtagtttt tacatgatag ctctgtagaa gtttcacatc 300
 t 301

<210> 270
<211> 301
<212> DNA
<213> Homo sapien

<400> 270
cattgaagag cttttgcgaa acatcagaac acaagtgtt ataaaattaa ttaagcctta 60
cacaagaata catattcctt ttatttctaa ggagttaaac atagatgtag ctgatgtgga 120
gagcttgctg gtgcagtgc ttttgataa cactattcat ggccgaattg atcaagtcaa 180
ccaactcctt gaactggatc atcagaagaa ggggtgtgca cgatatactg cactagataa 240
tggaccaacc aactaaattc tctcaccagg ctgtatcagt aaactggctt aacagaaaac 300
a 301

<210> 271
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 271
aaaagttct cataagatta acaatttaaa taaatatttg atagaacatt ctttctcatt 60
tttatagctc atcttttagg ttgatattca gttcatgctt cccttgctgt tcttgatcca 120
gaattgcaat cacttcatca gctgtattc gctccaattc tctataaagt gggccaagg 180
tgaaccacag agccacagca cactctttc ccttggtgac tgccttcacc ccatganggt 240
tctctctcc agatganaac tgatcatgcg ccacatttt gggttttata gaagcagtca 300
c 301

<210> 272
<211> 301
<212> DNA
<213> Homo sapien

<400> 272
taaattgcta agccacagat aacaccaatc aaatggaaca aatcactgtc ttcaaagtgc 60
ttatcagaaa accaatgag cctggaatct tcataatacc taaacatgcc gtatttagga 120
tccaataatt ccctcatgat gagcaagaaa aattctttgc gcaccctcc tgcattcaca 180
gcattctctc caacaaatat aaccttgagt ggcttcttgc aatctatgtt ctttgttttc 240
ctaaggactt ccattgcac tctacaata ttttctctac gcaccactag aattaagcag 300
g 301

<210> 273
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 273
acatgtgtgt atgtgtatct ttgggaaaaa aanaagacat cttgtttayt atttttttgg 60
agagangctg ggacatggat aatcacwtaa tttgctayta tyactttaat ctgactygaa 120

gaaccgtcta aaaataaaat ttaccatgtc dtatatctct tatagtatgc ttatttcacc 180
 ttytttctgt ccagagagag tatcagtgac ananatttma ggggtgaamac atgmattggg 240
 gggactntty tttacngagm accctgcccg sgcgcctcg makcngantt ccgcsananc 300
 t 301

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 274

cttatatact ctttctcaga ggcaaaagag gagatgggta atgtagacaa ttctttgagg 60
 aacagtaaat gattattaga gagaangaat ggaccaagga gacagaaatt aacttgtaaa 120
 tgattctctt tggaatctga atgagatcaa gaggccagct ttagcttggt gaaaagtcca 180
 tctaggtatg gttgcattct cgtcttcttt tctgcagtag ataatgaggt aaccgaaggc 240
 aattgtgctt cttttgataa gaagctttct tggtcatatc aggaaattcc aganaaagtc 300
 c 301

<210> 275

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 275

tcggtgtcag cagcacgtgg cattgaacat tgcaatgtgg agcccaaacc acagaaaatg 60
 gggtgaaatt ggccaacttt ctattaactt atgttggtgca ttttgccacc aacagtaagc 120
 tggcccttct aataaaagaa aattgaaagg tttctcacta aacggaatta agtagtggag 180
 tcaagagact cccaggcctc agcgtacctg cccgggcggc cgctcgaagc cgaattctgc 240
 agatatccat cacactggcg gncgctcgan catgcatcta gaaggnccaa ttcgccctat 300
 a 301

<210> 276

<211> 301

<212> DNA

<213> Homo sapien

<400> 276

tgtacacata ctcaataaat aaatgactgc attgtgggtat tattactata ctgattatat 60
 ttatcatgtg acttctaatt agaaaatgta tccaaaagca aaacagcaga tatacaaaat 120
 taaagagaca gaagatagac attaacagat aaggcaactt atacattgag aatccaaatc 180
 caatacattt aaacatttgg gaaatgaggg ggacaaatgg aagccagatc aaatttgtgt 240
 aaaactattc agtatgtttc ccttgcttca tgtctgagaa ggctctcctt caatggggat 300
 g 301

<210> 277

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 277
 tttgttgatg tcagtatttt attacttgcg ttatgagtgc tcacctggga aattctaaag 60
 atacagagga cttggaggaa gcagagcaac tgaatttaat ttaaaagaag gaaaacattg 120
 gaatcatggc actcctgata ctttcccaaa tcaacactct caatgcccca ccctcgctct 180
 caccatagtg gggagactaa agtggccacg gatttgcctt angtgtgcag tgcgttctga 240
 gttcncgtgc gattacatct gaccagtctc ctttttccga agtcntccg ttcaatcttg 300
 c 301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 278
 taccactaca ctccagcctg ggcaacagag caagacctgt ctcaaagcat aaaatggaat 60
 aacatatcaa atgaaacagg gaaaaagaag ctgacaattt atggaagcca gggcttgta 120
 cagtctctac tgttattatg cattacctgg gaatttatat aagcccttaa taataatgcc 180
 aatgaacatc tcatgtgtgc tcacaatggt ctggcactat tataagtgtc tcacagggtt 240
 tatgtgttct tcgtaacttt atggantagg tactcggccg cgaacacgct aagccgaatt 300
 c 301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 279
 aaagcaggaa tgacaaagct tgcttttctg gtatgttcta ggtgtattgt gacttttact 60
 gttatattaa ttgccaatat aagtaaatat agattatata tgtatagtgt ttcacaaagc 120
 ttagaccttt accttcagc caccacacag tgcttgatat ttcagagtca gtcattgggt 180
 atacatgtgt agttccaaag cacataagct agaanaanaa atatttctag ggagcactac 240
 catctgtttt cacatgaaat gccacacaca tagaactcca acatcaattt cattgcacag 300
 a 301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280
 ggtactggag ttttctccc ctgtgaaaac gtaactactg ttgggagtga attgaggatg 60
 tagaaagggtg gtggaaccaa attgtggtca atggaaatag gagaatatgg ttctcactct 120

tgagaaaaaa acctaagatt agcccaggta gttgcctgta acttcagttt ttctgcctgg 180
 gtttgatata gtttaggggtt ggggttagat taagatctaa attacatcag gacaaagaga 240
 cagactatta actccacagt taattaagga ggtatgttcc atgtttattt gttaaagcag 300
 t 301

<210> 281

<211> 301

<212> DNA

<213> Homo sapien

<400> 281

aggtaacaaga aggggaatgg gaaagagctg ctgctgtggc attgttcaac ttgatattc 60
 gccgagcaat ccaaactctg aatgaagggg catcttctga aaaaggagat ctgaatctca 120
 atgtggtagc aatggcttta tcgggttata cggatgagaa gaactccctt tggagagaaa 180
 tgtgtagcac actgcgatta cagctaaata acccgattt gtgtgtcatg ttgcatttc 240
 tgacaagtga aacaggatct tacgatggag ttttgtatga aaacaaagtt gcagtacctc 300
 g 301

<210> 282

<211> 301

<212> DNA

<213> Homo sapien

<400> 282

cagggtactac agaattaaaa tactgacaag caagtagttt cttggcgtgc acgaattgca 60
 tccagaaccc aaaaattaaag aaattcaaaa agacattttg tgggcacctg ctagcacaga 120
 agcgagaag caaagcccag gcagaacat gctaacccta cagctcagcc tgcacagaag 180
 cgcagaagca aagcccaggc agaaccatgc taaccttaca gctcagcctg cacagaagcg 240
 cagaagcaaa gccaggcag aacatgctaa ccttacagct cagcctgcac agaagcacag 300
 a 301

<210> 283

<211> 301

<212> DNA

<213> Homo sapien

<400> 283

atctgtatac ggcagacaaa ctttatarag ttagagagagg tgagcgaaag gatgcaaaag 60
 cactttgagg gctttataat aatattgctgc ttgaaaaaaa aaatgtgtag ttgatactca 120
 gtgcattccc agacatagta aggggttgct ctgaccaatc aggtgatcat tttttctatc 180
 acttcccagg ttttatgcaa aaattttgtt aaattctata atggtgatat gcattcttta 240
 ggaaacatat acatttttaa aaatctattt tatgtaagaa ctgacagacg aatttgcttt 300
 g 301

<210> 284

<211> 301

<212> DNA

<213> Homo sapien

<400> 284

cagggtacaaa acgctattaa gtggcttaga atttgaacat ttgtggtctt tatttacttt 60
 gcttcgtgtg tgggcaaaag aacatcttcc ctaaataat attaccaaga aaagcaagaa 120
 gcagattagg tttttgacaa aacaaacagg ccaaaagggg gctgacctgg agcagagcat 180
 ggtgagaggc aaggcatgag agggcaagtt tggtgtggac agatctgtgc ctactttatt 240
 actggagtaa aagaaaacaa agttcattga tgtcgaagga tatatacagt gttagaaatt 300
 a 301

<210> 285

<211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (301)
 <223> n = A,T,C or G

<400> 285
 acatcaccat gatcgatcc cccacccatt atacgttgta tgtttacata aatactcttc 60
 aatgatcatt agtgttttaa aaaaaatact gaaaactcct tctgcatccc aatctctaac 120
 caggaaagca aatgctatct acagacctgc aagccctccc tcaaacnaaa ctatttctgg 180
 attaaatatg tctgacttct tttgaggtca cacgactagg caaatgctat ttacgatctg 240
 caaaagctgt ttgaagagtc aaagccccc tgtgaacacg atttctggac cctgtaacag 300
 t 301

<210> 286
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 286
 taccactgca ttcagcctg ggtgacagag tgagactcgg tctccaaaaa aaactttgct 60
 tgtatattat ttttgcctta cagtggatca ttctagtagg aaaggacagt aagatttttt 120
 atcaaaatgt gtcatgccag taagagatgt tatattcttt tctcatttct tccccacca 180
 aaaataagct accatatagc ttataagtct caaatttttg ctttttacta aaatgtgatt 240
 gtttctgttc attgtgtatg cttcatcacc tatattaggg aaattccatt ttttccttg 300
 t 301

<210> 287
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 287
 tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgttggg 60
 cccagaagga acgtagagat cagatattac aacagctttg ttttgagggg tagaaatatg 120
 aaatgatttg gttatgaacg cacagtttag gcagcagggc cagaatcctg accctctgcc 180
 ccgtgggtat ctctcccca gcttggtctg ctcagtgtat cacagtattc cattttgttt 240
 gttgcatgtc ttgtgaagcc atcaagattt tctcgtctgt tttcctctca ttggaatgc 300
 t 301

<210> 288
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 288
 gtacacctaa ctgcaaggac agctgaggaa tgtaatgggc agccgctttt aaagaagtag 60
 agtcaatagg aagacaaatt ccagttccag ctcagtctgg gtatctgcaa agctgcaaaa 120
 gatctttaa gacaatttca agagaatatt tccttaaagt tggcaatttg gagatcatac 180
 aaaagcatct gcttttgtga tttaatttag ctcactctgg cactggaaga atccaaacag 240
 tctgccttaa ttttgatga atgcatgatg gaaattcaat aatttagaaa gttaaaaaaa 300
 a 301

<210> 289
 <211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 289

```
ggtagactgt ttccatgta tgtttctaca cattgctacc tcagtgtcc tggaaactta      60
gcttttgatg tctccaagta gtccaccttc atttaactct ttgaaactgt atcatctttg    120
ccaagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa     180
cgttctataa atgaatgtgc tgaagcaaag tgcccatggt ggcggcgaan aagagaaaaga    240
tggtgtttgt tttggactct ctgtggtccc ttccaatgct gtgggtttcc aaccagnnga    300
a                                     301
```

<210> 290

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 290

```
acactgagct cttcttgata aatatacaga atgcttggca tatacaagat tctatactac      60
tgactgatct gttcatttct ctcacagctc ttaccccca aagcttttcc accctaagtg     120
ttctgacctc cttttctaat cacagtaggg atagaggcag anccacctac aatgaacatg     180
gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctacgagtgc     240
tgccttgaac aaaaacattt ctccatgtct ctttttcttc atgcctcaag taacagtga      300
a                                     301
```

<210> 291

<211> 301

<212> DNA

<213> Homo sapien

<400> 291

```
caggtacca tttcttctat cctagaaaca tttcatttta tgttggtgaa acataacaac      60
tatatcagct agattttttt tctatgcttt acctgctatg gaaaatttga cacattctgc    120
tttactcttt tgtttatagg tgaatcacia aatgtatttt tatgtattct gtagtccaat    180
agccatggct gtttacttca ttttaattat ttagcataaa gacattatga aaaggcctaa     240
acatgagctt cacttcccca ctaactaatt agcatctgtt atttcttaac cgtaatgcct     300
a                                     301
```

<210> 292

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 292

```

accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc      60
tgtattaaat aattttttaag tttaaaagat aaaataccat cattttaaat gttggtattc      120
aaaaccaaag natataaccg aaaggaaaaa cagatgagac ataaaaatgat ttgcnagatg      180
ggaaatatag tasttyatga atgttnatta aattccagtt ataatatggg ctacacactc      240
tcactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa      300
a                                                                                   301

```

```

<210> 293
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 293
ggtaccaagt gctgggtgcc gctgttacc tgttctcact gaaaagtctg gctaagtctc      60
ttgtgtagtc acttctgatt ctgacaatca atcaatcaat ggcctagagc actgactgtt      120
aacacaaaag tcaactagcaa agtagcaaca gctttaagtc taaatacaaa gctgttctgt      180
gtgagaattt tttaaaaggc tacttgtata ataacccttg tcatttttaa tgtacctcgg      240
ccgcgaccac gctaagccga attctgcaga tatccatcac actggcgggc gctcgagcat      300
g                                                                                   301

```

```

<210> 294
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 294
tgaccataa caatatacac tagctatctt ttttaactgtc catcattagc accaatgaag      60
attcaataaa attaccttta ttcacacatc tcaaaacaat tctgcaaatt cttagtgaag      120
tttaactata gtcacaganc ttaaattatc acattgtttt ctatgtctac tgaaaataag      180
ttcactactt ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc      240
cccaattata cagtagcaca accaccttat gtagttttta catgatagct ctgtagaggt      300
t                                                                                   301

```

```

<210> 295
<211> 305
<212> DNA
<213> Homo sapien

```

```

<400> 295
gtactctttc tctccctcc tctgaattta attctttcaa cttgcaattt gcaaggatta      60
cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac      120
ttggtttgtg aatccatctt gctttttccc cattggaact agtcattaac ccatctctga      180
actggtagaa aaacrtctga agagctagtc tatcagcatc tgacaggtga attggatggg      240
tttcagaacc atttcaccca gacagcctgt ttctatcctg ttttaataaat tagtttgggg      300
tctct                                                                                   305

```

```

<210> 296
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 296
aggtagtatg ggaagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct      60

```


cacctagtag taaactaaaa ataaactgaa actttatgga atctgaagtt attttccttg 120
 attaaataga attaataaac caatatgagg aaacatgaaa ccatgcaatc tactatcaac 180
 tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt 240
 tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg 300
 c 301

<210> 297
 <211> 300
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (300)
 <223> n = A,T,C or G

<400> 297
 actgagtttt aactggacgc caagcaggca aggctggaag gttttgctct ctttgtgcta 60
 aaggttttga aaaccttgaa ggagaatcat tttgacaaga agtacttaag agtctagaga 120
 acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180
 tccatcattg ggagtgcact ggccatccct caaaatttgt ctgggctggc ctgagtggtc 240
 accgcacctc ggccgcgacc acgctaagcc gaattctgca gatatccatc acactggcgg 300

<210> 298
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (301)
 <223> n = A,T,C or G

<400> 298
 tatggggttt gtcacccaaa agctgatgct gagaaaggcc tccctggggc ccctcccgcg 60
 ggcactctgag agacctgggtg ttccagtgtt tctggaaatg ggtcccagtg ccgcccggctg 120
 tgaagctctc agatcaatca cgggaagggc ctggcgggtg tgccacactg gaaccaccct 180
 gtctgtctg tttacatttc actaycaggt tttctctggg cattacnatt tgttccccta 240
 caacagtgc ctgtgcattc tgctgtggcc tgctgtgtct gcaggtggct ctcagcgagg 300
 t 301

<210> 299
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 299
 gttttgagac ggagttttcac tcttggtgcc cagactggac tgcaatggca gggctctctgc 60
 tcaactgcacc ctctgcctcc caggttcgag caattctcct gctcagcct cccaggtagc 120
 tgggattgca ggctcacgcc accataccca gctaattttt ttgtattttt agtagagacg 180
 gagtttcgcc atgttgGCCa gctgggtctca aactcctgac ctcaagcgac ctgcctgcct 240
 cggcctccca aagtgcctgga attataggca tgagtcaaca cgcccagcct aaagatattt 300
 t 301

<210> 300
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 300
 attcagtttt atttgetgcc ccagtatctg taaccaggag tgccacaaaa tcttgccaga 60
 tatgtccac acccactggg aaaggctccc acctggctac ttctctatc agctgggtca 120
 gctgcattcc acaaggttct cagcctaagt agtttacta cctgccagtc tcaaaactta 180
 gtaaagcaag accatgacat tccccacgg aaatcagagt ttgccccacc gtcttggtac 240
 tataaagcct gcctctaaca gtccttgctt cttcacacca atccccgagc catcccccat 300
 g 301

<210> 301
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 301
 ttaaatTTTT gagaggataa aaaggacaaa taatctagaa atgtgtcttc ttcagtctgc 60
 agaggacccc aggtctccaa gcaaccacat ggtaagggc atgaataatt aaaagttggc 120
 gggaaactcac aaagaccctc agagctgaga caccacaaac agtgggagct cacaaagacc 180
 ctcagagctg agacaccac aacagtggga gctcacaag accctcagag ctgagacacc 240
 cacaacagca cctcgttcag ctgccacatg tgtgaataag gatgcaatgt ccagaagtgt 300
 t 301

<210> 302
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 302
 aggtacacat ttagcttggt gtaaatgact cacaaaactg attttaaaat caagttaatg 60
 tgaattttga aaattactac ttaatectaa ttcacaataa caatggcatt aaggtttgac 120
 ttgagttggc tcttagtatt atttatggta aataggctct taccacttgc aaataactgg 180
 ccacatcatt aatgactgac ttcccagtaa ggctctctaa ggggtaagta ggaggatcca 240
 caggatttga gatgctaagg ccccagagat cgtttgatcc aacctctta ttttcagagg 300
 g 301

<210> 303
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 303
 aggtaccaac tgtggaaata ggtagaggat cattttttct ttccatatca actaagttgt 60
 atattgtttt ttgacagttt aacacatctt cttctgtcag agattctttc acaatagcac 120
 tggctaattg aactaccgct tgcattgtaa aaatgggtgt ttgtgaaatg atcataggcc 180
 agtaacgggt atgtttttct aactgatctt ttgtcgttc caaagggacc tcaagacttc 240
 catcgatttt atatctgggg tctagaaaag gagttaatct gttttccctc ataaattcac 300
 c 301

<210> 304
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 304
 acatggatgt tattttgcag actgtcaacc tgaatttgta tttgcttgac attgcctaatt 60
 tattagtctc agtttcagct taccactttt ttgtctgcaa catgcaraas agacagtgcc 120
 ctttttagtg tatcatatca ggaatcatct cacattgggt tgtgccatta ctggtgcagt 180
 gactttcagc cacttgggta aggtggagtt ggccatatgt ctccactgca aaattactga 240

ttttcctttt gtaattaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct 300
c 301

<210> 305
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 305
gangtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcatc ctgggatgag 60
cagggggaca gacctggaca gacacgttgt catttgctgc tgtgggtagg aaaatgggag 120
taaaggagga gaaacagata caaaatctcc aactcagtat taaggatttc tcatgcctag 180
aatattggta gaaacaagaa tacattcata tggcaaataa ctaaccatgg tggaacaaaa 240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag 300
a 301

<210> 306
<211> 8
<212> PRT
<213> Homo sapien

<400> 306
Val Leu Gly Trp Val Ala Glu Leu
1 5

<210> 307
<211> 637
<212> DNA
<213> Homo sapien

<400> 307
acaggggratg aaggggaaagg gagaggatga ggaagccccc ctggggattt ggtttggtcc 60
ttgtgatcag gtggtctatg gggcttatcc ctacaaagaa gaatccagaa ataggggcac 120
attgaggaat gatacttgag cccaaagagc attcaatcat tgttttattt gccttmtttt 180
cacaccattg gtgaggagg gattaccacc ctggggttat gaagatgggt gaacacccca 240
cacatagcac cggagatatg agatcaacag tttcttagcc atagagattc acagcccaga 300
gcaggaggac gcttgcacac catgcaggat gacatggggg atgcgctcgg gattggtgtg 360
aagaagcaag gactgttaga ggcaggcttt atagtaacaa gacggtgggg caaactctga 420
tttcgtggg ggaatgtcat ggtcttgctt tactaagttt tgagactggc aggtagtga 480
actcattagg ctgagaacct tgtggaatgc acttgaccca sctgatagag gaagttagca 540
ggtgggagcc tttcccagtg ggtgtgggac atatctggca agattttgtg gcactcctgg 600
ttacagatac tggggcagca aataaaactg aatcttg 637

<210> 308
<211> 647
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(647)
<223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgctcagggg	aaggttcata	tgggactttc	tactgcccaa	ggttctatac	aggatataaa	120
ggngcctcac	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccaccctctc	gaccctttgg	aactcctctg	accctttaga	acaagcctac	ctaatactctg	240
ctagagaaaa	gaccaacaac	ggcctcaaag	gatctcttac	catgaaggtc	tcagctaatt	300
cttgggctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaaggg	tcaatttgct	360
cattttgtgt	gtggataaaag	tcaggatgcc	caggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaacaaca	tcaaagtcac	480
tgtatcaatt	gccatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	ttttctctct	gcttctgact	tgataaaaag	ggaccgt		647

<210> 309

<211> 460

<212> DNA

<213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaagc	cagaacaaca	tgtgatagat	60
aatatgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaataac	tcatcatttt	tggccagcag	ttgtttgatc	180
acaaaacatc	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaagtcag	240
ggggaattta	ttcctggcaa	ttttaattgg	actccttatg	tgagagcagc	ggctaccag	300
ctggggtggt	ggagcgaacc	cgctactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttggt	tttgtctttc	gggtgtgaag	attcttaagt			460

<210> 310

<211> 539

<212> DNA

<213> Homo sapien

<400> 310

acgggactta	tcaaataaag	ataggaaaag	aagaaaactc	aaatattata	ggcagaaatg	60
ctaaagggtt	taaaatatgt	caggattgga	agaaggcatg	gataaagaac	aaagtccagt	120
taggaaagag	aaacacagaa	ggaagagaca	caataaaagt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagattttgt	ggaaatgggt	tggtttgttg	tatggtatgt	attttagcaa	240
taatctttat	ggcagagaaa	gctaaaatcc	tttagcttgc	gtgaatgatc	acttgctgaa	300
ttcctcaagg	taggcattgat	gaaggagggg	ttagaggaga	cacagacaca	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaatagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaaggaag	aacttatggc	480
atattttcac	ccccacaaaa	gtcagttaaa	tattgggaca	ctaaccatcc	aggtcaaga	539

<210> 311

<211> 526

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(526)

<223> n = A,T,C or G

<400> 311

caaatttgag	ccaatgacat	agaattttac	aatcaagaa	gcttattctg	gggccatttc	60
ttttgacggt	ttctctaaac	tactaaagag	gcattaatga	tccataaatt	atattatcta	120
catttacagc	atttaaaatg	tgttcagcat	gaaatattag	ctacagggga	agctaaataa	180

attaaacatg gaataaagat ttgtccttaa atataatcta caagaagact ttgatatttg	240
tttttcacaa gtgaagcatt cttataaagt gtcataacct ttttggggaa actatgggaa	300
aaaatgggga aactctgaag gggttttaagt atcttacctg aagctacaga ctccataacc	360
tctctttaca gggagctcct gcagccccta cagaaatgag tggctgagat tcttgattgc	420
acagcaagag cttctcatct aaaccctttc cttttttagt atctgtgtat caagtataaa	480
agttctataa actgtagtnt acttatttta atccccaaag cacagt	526

<210> 312

<211> 500

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (500)

<223> n = A,T,C or G

<400> 312

cctctctctc cccacccct gactctagag aactggggtt tctcccagta ctccagcaat	60
tcattttctga aagcagttga gccactttat tccaaagtac actgcagatg ttcaaactct	120
ccatttctct tccccttcca cctgccagtt ttgctgactc tcaacttgct atgagtgtaa	180
gcattaagga cattatgctt cttcgattct gaagacaggc cctgctcatg gatgactctg	240
gcttcttagg aaaatatttt tcttccaaaa tcagtaggaa atctaaactt atcccctctt	300
tgcagatgtc tagcagcttc agacatttgg ttaagaacct atgggaaaaa aaaaaatcct	360
tgctaattgt gtttcctttg taaaccanga ttcttatttg nctggatatg aatatcagct	420
ctgaacgtgt ggtaaagatt tttgtgtttg aatataggag aaatcagttt gctgaaaagt	480
tagtcttaat tatctattgg	500

<210> 313

<211> 718

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (718)

<223> n = A,T,C or G

<400> 313

ggagatttgt gtggtttgca gccgagggag accaggaaga tctgcatggt gggaaggacc	60
tgatgataca gaggtgagaa ataagaaagg ctgctgactt taccatctga ggccacacat	120
ctgctgaaat ggagataatt aacatcacta gaaacagcaa gatgacaata taatgtctaa	180
gtagtacat gtttttgca atttccagcc cttttaata tccacacaca caggaagcac	240
aaaaggaagc acagagatcc ctgggagaaa tgcccgccg ccatcttggg tcatcgatga	300
gcctgcacct gtgcctgntc ccgcttgta gggaaggaca ttagaaaatg aattgatgtg	360
ttccttaaag gatggcagga aaacagatcc tgttgtggat atttatttga acgggattac	420
agatttgaaa tgaagtcaca aagtgagcat taccaatgag aggaaaacag acgagaaaat	480
cttgatggtt cacaagacat gcaacaaaca aaatggaata ctgtgatgac acgagcagcc	540
aactggggag gagataccac ggggcagagg tcaggattct ggccctgctg cctaactgtg	600
cgttatacca atcatttcta ttctacctt caaacaagct gtngaatac tgacttacgg	660
ttcttntggc ccacatttcc atnatccacc cntcntttt aannttantic caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

```

gtttatttac attacagaaa aaacatcaag acaatgtata ctatttcaaa tatatccata 60
cataatcaaa tatagctgta gtacatgttt tcattggtgt agattaccac aaatgcaagg 120
caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg tgtagtccaa 180
gctctcggtg gtccagccac tgtgaaacat gctcccttta gattaacctc gtggacgctc 240
ttgttgattt gctgaactgt agtgccctgt attttgcttc tgtctgtgaa ttctgttgct 300
tctggggcat ttccttgta tgcagaggac caccacacag atgacagcaa tctgaatt 358

```

<210> 315
 <211> 341
 <212> DNA
 <213> Homo sapien

```

<400> 315
taccacctcc ccgctggcac tgatgagccg catcaccatg gtcaccagca ccatgaaggc 60
ataggtgatg atgaggacat ggaatgggcc cccaaggatg gtctgtccaa agaagcgagt 120
gacccccatt ctgaagatgt ctggaacctc taccagcagg atgatgatag cccaatgac 180
agtcaccagc tccccgacca gccggatata gtccttaggg gtcatgtagg ctctctgaag 240
tagcttctgc tgtaagaggg tgttgctccg ggggctctg cggttattgg tcttgggctt 300
gagggggcgg tagatgcagc acatgggtga gcagatgatg t 341

```

<210> 316
 <211> 151
 <212> DNA
 <213> Homo sapien

```

<400> 316
agactgggca agactcttac gcccacact gcaatttggc cttgttgccg tatccattta 60
tgtgggcctt tctcgagttt ctgattataa acaccactgg agcgatgtgt tgactggact 120
cattcaggga gctctgggtg caatattagt t 151

```

<210> 317
 <211> 151
 <212> DNA
 <213> Homo sapien

```

<400> 317
agaactagtg gatcctaag aaatacctga aacatatatt ggcatttata aatggctcaa 60
atcttcattt atctctggcc ttaaccctgg ctcttgaggc tgccggccagc agatcccagg 120
ccagggtctt gttcttgcca cacctgcttg a 151

```

<210> 318
 <211> 151
 <212> DNA
 <213> Homo sapien

```

<400> 318
actggtggga ggcgctgttt agttggctgt ttccagaggg gtctttcgga gggacctcct 60
gctgcaggct ggagtgtctt tattcctggc gggagaccgc acattccact gctgaggctg 120
tggggcggt ttatcaggca gtgataaaca t 151

```

<210> 319
 <211> 151
 <212> DNA
 <213> Homo sapien

```

<400> 319
aactagtggg tccagagcta taggtacagt gtgatctcag ctttgcaaac acattttcta 60
catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg 120

```

taagattggg tttatgtgat tttagtgggt a 151

<210> 320

<211> 150

<212> DNA

<213> Homo sapien

<400> 320

aactagtgga tccactagtc cagtgtgggt gaattccatt gtgttggggt tctagatcgc 60
gagcggctgc cctttttttt tttttttttg ggggggaatt tttttttttt aatagttatt 120
gagtgttcta cagcttacag taaataccat 150

<210> 321

<211> 151

<212> DNA

<213> Homo sapien

<400> 321

agcaactttg tttttcatcc aggttatttt aggcttagga tttcctctca cactgcagtt 60
taggggtggca ttgtaaccag ctatggcata ggtgttaacc aaaggctgag taaacatggg 120
tgcctctgag aaatcaaagt cttcatacac t 151

<210> 322

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(151)

<223> n = A,T,C or G

<400> 322

atccagcatc ttctctgtt tcttgcttc ctttttcttc ttcttasatt ctgcttgagg 60
tttgggcttg gtcagtttgc cacagggctt ggagatggtg acagtcttct ggcattcggc 120
attgtgcagg gctcgttca nacttccagt t 151

<210> 323

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(151)

<223> n = A,T,C or G

<400> 323

tgaggacttg tktttttttt ctttattttt aatcctctta ckttgtaa atattgccta 60
nagactcant tactaccag tttgtggtt twtgggagaa atgtaactgg acagttagct 120
gttcaatyaa aaagacactt ancccatgtg g 151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)... (461)
 <223> n = A,T,C or G

<400> 324
 acctgtgtgg aatttcagct ttcctcatgc aaaaggattt tgtatccccg gcctacttga 60
 agaagtgggc agctaaagga atccagggtg ttgggtggac tgtaataacc tttgatgaaa 120
 agagttacta cgaatcccat cttggttcca gctatatcac tgacagcatg gtagaagact 180
 gcgaacctca cttctagact ttcacgggtg gacgaaacgg gttcagaaac tgccaggggc 240
 ctcatcacagg gatatacaaaa taccctttgt gctaccagg ccctggggaa tcagggtgact 300
 cacacaaatg caatagttgg tcaactgcatt tttacctgaa ccaaagctaa acccggtgtt 360
 gccaccatgc accatggcat gccagagttc aacactgttg ctcttgaaaa ttgggtctga 420
 aaaaacgcac aagagcccct gccctgccct agctgangca c 461

<210> 325
 <211> 400
 <212> DNA
 <213> Homo sapien

<400> 325
 acactgtttc catgttatgt ttctacacat tgctacctca gtgctcctgg aaacttagct 60
 tttgatgtct ccaagtagtc caccttcatt taactctttg aaactgtatc atctttgcc 120
 agtaagagtg gtggcctatt tcagctgctt tgacaaaatg actggctcct gacttaacgt 180
 tctataaatg aatgtgctga agcaaagtgc ccatgggtggc ggcaagaag agaaagatgt 240
 gttttgtttt ggactctctg tggctccctc caatgctgtg ggtttccaac caggggaaag 300
 gtcccttttg cattgccaag tgccataacc atgagcacta cgctaccatg gttctgcctc 360
 ctggccaagc aggtctggtt gcaagaatga aatgaatgat 400

<210> 326
 <211> 1215
 <212> DNA
 <213> Homo sapien

<400> 326
 ggaggactgc agcccgcact cgcagccctg gcaggcggca ctggtcatgg aaaacgaatt 60
 gttctgctcg ggcgtcctgg tgcacccgca gtgggtgctg tcagccgcac actgtttcca 120
 gaactcctac accatcgggc tgggcctgca cagtcttgag gccgaccaag agccagggag 180
 ccagatggtg gaggccagcc tctccgtacg gcacccagag tacaacagac ccttgctcgc 240
 taacgacctc atgctcatca agttggacga atccgtgtcc gactctgaca ccacccggag 300
 catcagcatt gcttcgcagt gccctaccgc ggggaactct tgcctcgttt ctggctgggg 360
 tctgctggcg aacggcagaa tgcctaccgt gctgcagtgc gtgaacgtgt cgggtggtgc 420
 tgaggaggtc tgcagtaagc tctatgacct gctgtaccac cccagcatgt tctgcgccg 480
 cggaggggcaa gaccagaagg actcctgcaa cggtgactct ggggggcccc tgatctgcaa 540
 cgggtacttg cagggccttg tgtctttcgg aaaagccccg tgtggccaag ttggcgtgcc 600
 aggtgtctac accaacctct gcaaattcac tgagtggata gagaaaaccg tccaggccag 660
 ttaactctgg ggactgggaa cccatgaaat tgacccccaa atacatcctg cggaaggaa 720
 tcaggaatat ctgttcccag cccctcctcc ctcaggccca ggagtccagg cccccagccc 780
 ctctccctc aaaccaaggg tacagatccc cagccctcc tccctcagac ccaggagtcc 840
 agacccccca gccctcctc cctcagacct aggagtccag cccctcctcc ctcagaccga 900
 ggagtccaga cccccagcc cctcctccct cagaccagg ggtccaggcc cccaaccct 960
 cctccctcag actcagaggt ccaagcccc aaccctcct tccccagacc cagaggtcca 1020
 ggtcccagcc cctcctccct cagaccagc ggtccaatgc cacctagact ctccctgtac 1080
 acagtgcctt cttgtggcac gttgacccaa ccttaccagt tggtttttca tttttgtcc 1140
 ctttccccta gatccagaaa taaagtctaa gagaagcgca aaaaaaaaaa aaaaaaaaaa 1200
 aaaaaaaaaa aaaaa 1215

<210> 327
 <211> 220

<212> PRT

<213> Homo sapien

<400> 327

Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
 1 5 10 15
 Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
 20 25 30
 Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
 35 40 45
 Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
 50 55 60
 Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
 65 70 75 80
 Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
 85 90 95
 Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
 100 105 110
 Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
 115 120 125
 Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
 130 135 140
 Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
 145 150 155 160
 Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
 165 170 175
 Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
 180 185 190
 Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
 195 200 205
 Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 210 215 220

<210> 328

<211> 234

<212> DNA

<213> Homo sapien

<400> 328

cgctcgtctc tggtagetgc agccaaatca taaacggcga ggactgcagc ccgcactcgc 60
 agccctggca ggcggcactg gtcattggaaa acgaattgtt ctgctcgggc gtcctgggtgc 120
 atccgcagtg ggtgctgtca gccacacact gtttccagaa ctctacacc atcgggctgg 180
 gcctgcacag tcttgaggcc gaccaagagc cagggagcca gatggtggag gccca 234

<210> 329

<211> 77

<212> PRT

<213> Homo sapien

<400> 329

Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
 1 5 10 15
 Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met Glu Asn Glu Leu
 20 25 30
 Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
 35 40 45
 His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
 50 55 60

Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
65 70 75

<210> 330
<211> 70
<212> DNA
<213> Homo sapien

<400> 330
cccaacacaa tggcccgatc ccaccctga ctccgccctc aggatcgctc gtctctggta 60
gctgcagcca 70

<210> 331
<211> 22
<212> PRT
<213> Homo sapien

<400> 331
Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu
1 5 10 15
Val Ser Gly Ser Cys Ser
20

<210> 332
<211> 2507
<212> DNA
<213> Homo sapien

<400> 332
tgggtgccgt gcagccggca gagatgggtg agctcatgtt cccgctgttg ctccctcttc 60
tgcccttctt tctgtatatg gctgcgcccc aaatcaggaa aatgctgtcc agtgggggtg 120
gtacatcaac tgttcagctt cctgggaaag tagttgtggt cacaggagct aatacaggta 180
tcgggaagga gacagccaaa gagctggctc agagaggagc tcgagtatat ttagcttgcc 240
gggatgtgga aaagggggaa ttggtggcca aagagatcca gaccacgaca ggaaccagc 300
aggtgttggt gcggaaactg gacctgtctg atactaagtc tattcgagct ttgtctaagg 360
gcttcttagc tgaggaaaag cactccacg ttttgatcaa caatgcagga gtgatgatgt 420
gtccgtactc gaagacagca gatggcttg agatgcacat aggagtcaac cacttgggtc 480
acttctctct aacctctctg ctgctagaga aactaaagga atcagcccca tcaaggatag 540
taaagtgtgc ttccctcgca catcacctgg gaaggatcca cttccataac ctgcaggcgc 600
agaaattcta caatgcaggc ctggcctact gtcacagcaa gctagccaac atcctcttca 660
cccaggaact ggcccggaga ctaaaaggct ctggcggtac gacgtattct gtacaccctg 720
gcacagtcca atctgaactg gttcggcact catctttcat gagatggatg tgggtggctt 780
tctccttttt catcaagact cctcagcagg gagcccagac cagcctgcac tgtgccttaa 840
cagaaggtct tgagattcta agtgggaatc atttcagtga ctgtcatgtg gcatgggtct 900
ctgcccgaagc tcgtaatgag actatagcaa ggcggctgtg ggacgtcagt tgtgacctgc 960
tgggcctccc aatagactaa caggcagtgc cagttggacc caagagaaga ctgcagcaga 1020
ctacacagta cttcttgta aaatgattct ccttcaagggt tttcaaaacc ttttagcaca 1080
agagagcaaa acctccagc cttgctgct tgggtgtccag ttaaaactca gtgtactgcc 1140
agattcgtct aaatgtctgt catgtccaga tttactttgc ttctgttact gccagagtta 1200
ctagagatat cataatagga taagaagacc ctcatatgac ctgcacagct cattttcctt 1260
ctgaaagaaa ctactaccta ggagaatcta agctatagca gggatgattt atgcaaattt 1320
gaactagctt ctttggttcac aattcagttc ctcccaacca accagtcttc acttcaagag 1380
ggccacactg caacctcagc ttaacatgaa taacaaagac tggctcagga gcagggttg 1440
cccaggcatg gtggatcacc ggaggtcagt agttcaagac cagcctggcc aacatggtga 1500
aaccaccct ctactaaaaa ttgtgtatat ctttgtgtgt cttcctgttt atgtgtgcca 1560
agggagtatt ttcacaaagt tcaaaacagc cacaataatc agagatggag caaaccagtg 1620
ccatccagtc tttatgcaaa tgaaatgtg caaagggaag cagattctgt atatgttggt 1680
aactaccac caagagcaca tgggtagcag ggaagaagta aaaaaagaga aggagaatac 1740

tggaagataa tgcacaaaat gaagggacta gttaaggatt aactagccct ttaaggatta	1800
actagttaag gattaatagc aaaagayatt aaatatgcta acatagctat ggaggaattg	1860
agggcaagca cccaggactg atgaggtctt aacaaaaacc agtgtggcaa aaaaaaaa	1920
aaaaaaaaa aaaaatccta aaaacaaaca acaaaaaaaa acaattcttc attcagaaaa	1980
attatcttag ggactgatat tggtaattat ggtcaattta ataattttt ggggcatttc	2040
cttacattgt cttgacaaga ttaaaatgtc tgtgccaaaa ttttgattt tatttgagaa	2100
cttcttatca aaagtaatgc tgccaaagga agtctaagga attagtagtg ttcccatcac	2160
ttgtttggag tgtgctattc taaaagattt tgatttcttg gaatgacaat tatattttta	2220
ctttgggtgg ggaaagagtt ataggaccac agtcttctct tctgatactt gtaaattaat	2280
cttttattgc acttggtttt accattaagc tatatgttta gaaatggtca ttttacggaa	2340
aaattagaaa aattctgata atagtgcaga ataaatgaat taatgtttta cttattttat	2400
attgaactgt caatgacaaa taaaattct ttttgattat ttttgtttt catttaccag	2460
aataaaaacg taagaattaa aagtttgatt acaaaaaaaa aaaaaa	2507

<210> 333

<211> 3030

<212> DNA

<213> Homo sapien

<400> 333

gcaggcgact tgcgagctgg gagcgattta aaacgctttg gattcccccg gcctgggtgg	60
ggagagcgag ctgggtgccc cctagattcc cgcctcccg acctcatgag ccgacctcg	120
gtcccatgga gcccggaat tatgccacct tggatggagc caaggatata gaaggcttgc	180
tgggagcggg agggggcgcg aatctggtcg cccactcccc tctgaccagc caccagcgg	240
cgcctacgt gatgcctgt gtcaactatg ccccttggga tctgccaggc tcggcggagc	300
cgccaaagca atgccacca tgcctgggg tgcccaggg gacgtcccca gctcccgctc	360
cttatggtta ctttgagggc ggggtactact cctgctgagt gtcccggagc tcgctgaaac	420
cctgtgcccc ggcagccacc ctggcccggt acccccgga gactcccacg gccggggaag	480
agtaccccg ycgccccact gagtttgcct tctatccggg atatccggga acctaccagc	540
ctatggccag ttacctggac gtgtctgtgg tgcagactct ggggtctcct ggagaaccgc	600
gacatgact cctgttgcct gtggacagtt accagtcttg ggtctctcgt ggtggctgga	660
acagccagat gtgttgccag ggagaacaga acccaccagg tcccttttgg aaggcagcat	720
ttgcagactc cagcgggcag caccctcctg acgcctgcgc cttctgtcgc ggccgcaaga	780
aacgcattcc gtacagcaag gggcagttgc gggagctgga gcgggagtat gcggctaaca	840
agttcatcac caaggacaag aggcgcaaga tctcggcagc caccagcctc tcggagcggc	900
agattaccat ctggtttcag aaccgcggg tcaaagagaa gaaggttctc gccaaagtga	960
agaacagcgc taccctttaa gagatctcct tgcctgggtg ggaggagcga aagtgggggt	1020
gtcctgggga gaccaggaac ctgccaagcc caggttgggg ccaaggactc tgctgagagg	1080
cccctagaga caacaccctt cccaggccac tggctgtctg actgttctc aggaagcggc	1140
tgggtacca gtatgtgcag ggagacggaa cccctagtga cagccactc caccaggggt	1200
cccaaagaac ctggcccagt cataatcatt catcctgaca gtggcaataa tcacgataac	1260
cagtactagc tgccatgac gttagcctca tttttctat ctagagctct gtagagcact	1320
ttagaaaccg ctttcatgaa ttgagctaata tatgaataaa ttggaaggc gatcccttg	1380
cagggaagct ttctctcaga ccccttcca ttacacctct caccctggta acagcaggaa	1440
gactgaggag aggggaacgg gcagattcgt tgtgtggctg tgatgtccgt ttagcatttt	1500
tctcagctga cagctgggta ggtggacaat tgtagaggt gtctcttctt cctccttct	1560
ccacccata ggggtgtacc actggtcttg gaagcaccca tccttaatac gatgattttt	1620
ctgtcgtgtg aaaatgaagc cagcaggtcg cccctagtca gtccttctt ccagagaaaa	1680
agagatttga gaaagtgcct gggtaatca ccattaattt cctccccaa actctctgag	1740
tcttccctta atatttctgg tggttctgac caaagcaggt catggtttgt tgagcatttg	1800
ggatcccagt gaagtagatg ttgttagcct tgcatactta gcccttcca ggcacaaacg	1860
gagtggcaga gtggtgccaa cctgttttcc ccagtccacg tagacagatt cacagtgcgg	1920
aattctggaa gctggagaca gacgggtctt ttgcagagcc gggactctga gagggacatg	1980
agggcctctg cctctgtgtt cattctctga tgcctgtac ctgggtcag tgcccgttg	2040
gactcatctc ctggccgcgc agcaaaagcca cctggtctgt gctgggtcct cctgcacct	2100
aggctggggg tggggggcct gccggcgcat tctccacgat tgagcgaca gccctgaagt	2160
ctggacaacc cgcagaaccg aagctccgag cagcgggtcg gtggcgagta gtgggtcgg	2220
tggcgagcag ttggtggtgg gccgcggccg cactacctc gaggacattt cctcccgga	2280

gccagctctc	ctagaaaccc	cgcgccggcc	gccgcagcca	agtgtttatg	gcccgcggtc	2340
gggtgggac	ctagccctgt	ctcctctcct	gggaaggagt	gaggggtggga	cgtgacttag	2400
acacctacaa	atctatttac	caaagaggag	cccgggactg	agggaaaagg	ccaaagagtg	2460
tgagtgcacg	cggactgggg	gttcaggggg	agaggacgag	gaggaggaag	atgaggtcga	2520
tttcttgatt	taaaaaatcg	tccaagcccc	gtggtccagc	ttaaggctct	cggttacatg	2580
cgccgctcag	agcaggtcac	tttctgcctt	ccacgtcctc	cttcaaggaa	gccccatgtg	2640
ggtagctttc	aatatcgacg	gttcttactc	ctctgcctct	ataagctcaa	acccaccaac	2700
gatcgggcaa	gtaaaccccc	tccctcgccg	acttcggaac	tggcgagagt	tcagcgacga	2760
tgggcctgtg	gggagggggc	aagatagatg	agggggagcg	gcatggtgcg	gggtgacccc	2820
ttggagagag	gaaaaaggcc	acaagagggg	ctgccaccgc	cactaacgga	gatggccctg	2880
gtagagacct	ttgggggtct	ggaacctctg	gactccccat	gctctaactc	ccacactctg	2940
ctatcagaaa	cttaaaactg	aggattttct	ctgtttttca	ctcgcaataa	aytcagagca	3000
aaacaaaaaa	aaaaaaaaaa	aaaactcgag				3030

<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

ggcgcccgct	ctagagctag	tgggatcccc	cgggctgcac	gaattcggca	cagtgagttt	60
ggagttttac	ctgtattgtt	ttaattttcaa	caagcctgag	gactagccac	aaatgtaccc	120
agttttacaaa	tgaggaaaca	ggtgcaaaaa	ggttggttacc	tgtcaaagg	cgtatgtggc	180
agagccaaga	tttgagccca	gttatgtctg	atgaacttag	cctatgtctt	ttaaacttct	240
gaatgctgac	cattgaggat	atctaaactt	agatcaattg	cattttccct	ccaagactat	300
ttactttatca	atacaataat	accaccttta	ccaactctat	gttttgatac	gagactcaaa	360
tatgccagat	atatgtaaaa	gcaacctaca	agctctctaa	tcatgtcac	ctaaaagatt	420
cccgggatct	aataggctca	aagaaacttc	ttctagaaat	ataaaagaga	aaattggatt	480
atgcaaaaaat	tcattattaa	tttttttcat	ccatccttta	attcagcaaa	catttatctg	540
ttgttgactt	tatgcagtat	ggccttttaa	ggattggggg	acagggtgaag	aacgggggtgc	600
cagaatgcat	cctcctacta	atgagggtcag	tacacatttg	cattttaaaa	tgccctgtcc	660
agctgggcat	ggtggatcat	gcctgtaatc	tcaacattgg	aaggccaagg	caggaggatt	720
gcttcagccc	aggagttcaa	gaccagcctg	ggcaacatag	aaagacccca	tctctcaatc	780
aatcaatcaa	tgccctgtct	ttgaaaataa	aaactcttta	gaaagggtta	atgggcaggg	840
tgtggtagct	catgcctata	atacagcact	ttgggaggct	gaggcaggag	gatcacttta	900
gcccagaagt	tcaagaccag	cctgggcaac	aagtgcacac	tcatctcaat	tttttaataa	960
aatgaataca	tacataagga	aagataaaaa	gaaaagttaa	atgaaagaat	acagtataaa	1020
acaaatctct	tggacctaaa	agtatttttg	ttcaagccaa	atattgtgaa	tcacctctct	1080
gtgttgagga	tacagaatat	ctaagcccag	gaaactgagc	agaaagtcca	tgtactaact	1140
aatcaacccg	aggcaaggca	aaaatgagac	taactaatca	atccgaggca	aggggcaaat	1200
tagaccggaac	ctgactctgg	tctattaaag	gacaactttc	cctctgttgt	atttttcttt	1260
tattcaatgt	aaaaggataa	aaactctcta	aaactaaaaa	caatgtttgt	caggagttac	1320
aaaccatgac	caactaatta	tggggaatca	taaaatatga	ctgtatgaga	tcttgatggt	1380
ttacaaagtg	taccactgtt	taatcacttt	aaacattaat	gaacttaaaa	atgaatttac	1440
ggagattgga	atgtttcttt	cctgttgat	tagttggctc	aggtgccaat	aacaaaatac	1500
cacagactgg	gaggtttaag	taacagaaat	tcatttctca	cagttctggg	ggctggaagt	1560
ccacgatcaa	ggtgcaggaa	aggcaggctt	cattctgagg	ccccctctct	ggctcacatg	1620
tgccaccct	cccactgcgt	gctcacatga	cctctttgtg	ctcctggaaa	gaggggtgtg	1680
gggacagagg	gaaagagaag	gagagggaac	tctctggtgt	ctcgtctttc	aaggacctta	1740
acctgggcca	ctttggccca	ggcactgtgg	ggtggggggg	tgtggctgct	ctgctctgag	1800
tggccaagat	aaagcaacag	aaaaatgtcc	aaagctgtgc	agcaaaagaca	agccaccgaa	1860
cagggatctg	ctcatcagtg	tggggacctc	caagtcggcc	acctggagg	caagcccca	1920
cagagcccat	gcaaggtggc	agcagcagaa	gaagggaatt	gtccctgtcc	ttggcacatt	1980
cctcaccgac	ctggtgatgc	tggacactgc	gatgtaatgg	aatgtgggatg	agaatatgat	2040
ggactccag	aaaaggagac	ccagctgctc	aggtggctgc	aaatcattac	agccttcac	2100
ctggggagga	actggggggc	tggttctggg	tcagagagca	gccagtgag	ggtgagagct	2160
acagcctgtc	ctgccagctg	gatccccagt	cccggtcaac	cagtaatcaa	ggctgagcag	2220
atcaggcttc	cggagctgg	tcttggaag	ccagccctgg	ggtgagttgg	ctcctgctgt	2280

ggtactgaga caatattgtc a taaattcaa tgcgcccttg tatccctttt tcttttttat 2340
 ctgtctacat ctataatcac tat cataact agtctttgtt agtggttcta ttcmaactaa 2400
 tagagatatg ttataact 2417

<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

atccctcctt	ccccactctc	ctttccagaa	ggcacttggg	gtcttatctg	ttggactctg	60
aaaacacttc	agggcgccctt	ccaaggcttc	cccaaaccct	taagcagccg	cagaagcgt	120
cccgagctgc	cttctccac	actcaggtga	tcgagttgga	gaggtaagttc	agccatcaga	180
agtacctgtc	ggcccttgaa	cgggccacc	tggccaagaa	cctcaagctc	acggagaccc	240
aagtgaagat	atgggtccag	aacagacgt	ataagactaa	gcgaaaagcag	ctctcctcgg	300
agctgggaga	cttgagaag	cactcctctt	tgcggccct	gaaagagag	gccttctccc	360
gggcctccct	ggctccgtg	tataacagct	atccttacta	cccatacc	tgactgcgtg	420
gcagctggag	ccagctttt	tggtaatgcc	agctcaggtg	acaaccatt	atgatcaaaaa	480
ctgcctccc	cagggtgtct	ctatgaaaag	cacaaggggc	caaggtcagg	atagcaagagg	540
tgtgcacacc	aaagctattg	gagatttgcg	tggaaatctc	asattcttca	ctggtagagac	600
aatgaaacaa	cagagacagt	gaaagtttta	atacctaagt	cattccccca	gtgcataactg	660
taggtcattt	ttttgtctc	tggctacctg	tttgaagggg	agagagggaa	aatcaagtg	720
tattttccag	cactttgtat	gattttggat	gagctgtaca	cccaaggatt	ctgtttgtgca	780
actccatcct	cctgtgtcac	tgaatatcaa	ctctgaaaga	gcaaaccctaa	caggagaaag	840
gacaaccagg	atgaggatgt	caccaactga	attaaactta	agtcacagaag	cctcctgttg	900
gccttggat	atggccaagg	ctctctctgt	ccctgtaaaa	gagaggggca	aatagagag	960
ctccaagaga	acgcctcat	gctcagcaca	tatttgcag	ggagggggag	atgggtggga	1020
ggagatgaaa	atatcagctt	ttcttattcc	tttttattcc	ttttaaaatg	gtatgccaac	1080
ttaagtattt	acagggtggc	ccaaatagaa	caagatgcac	tcgctgtgat	tttaagacaa	1140
gctgtataaa	cagaactcca	ctgcaagagg	gggggcccgg	ccaggagaat	ctccgcttgt	1200
ccaagacagg	ggcctaagga	gggtctccac	actgctgcta	ggggctgttg	cattttttta	1260
ttagtagaaa	gtggaaaggc	ctcttctcaa	cttttttccc	ttgggctgga	gaatttagaa	1320
tcagaagttt	cctggagttt	tcaggctatc	atatatactg	tatcctgaaa	ggcaacataa	1380
ttcttctctc	cctcctttta	aaattttgtg	ttcctttttg	cagcaattac	tcactaaagg	1440
gcttcatttt	agtccagatt	tttagtctgg	ctgcacctaa	cttatgcctc	gcttatttag	1500
cccgagatct	ggtctttttt	ttttttttt	tttttccgtc	tcccaaaagc	tttatctgtc	1560
ttgacttttt	aaaaagttt	gggggcagat	ctgaattgg	ctaaaagaca	tgcattttta	1620
aaactagcaa	ctcttatttc	tttcctttaa	aaatacatag	cattaaatcc	caaatccctat	1680
ttaaagacct	gacagcttga	gaaggctcact	actgcattta	taggaccttc	tgggtggttct	1740
gctgttacgt	ttgaagtctg	acaatccttg	agaatctttg	catgcagagg	aggtaaagagg	1800
tattggattt	tcacagagga	agaacacagc	gcagaatgaa	gggcccaggct	tactgagctg	1860
tccagtggag	ggctcatggg	tgggacatgg	aaaagaaggc	agcctaggcc	ctggggagcc	1920
cagtccactg	agcaagcaag	ggactgagtg	agccttttgc	aggaaaaggc	taagaaaaag	1980
gaaaaccatt	ctaaaacaca	acaagaaact	gtccaaatgc	tttggaact	gtgtttattg	2040
cctataatgg	gtccccaaaa	tgggtaacct	agacttcaga	gagaatgagc	agagagcaaa	2100
ggagaaatct	ggctgtcctt	ccattttcat	tctgttatct	caggtagagct	ggtagagggg	2160
agacattaga	aaaaaatgaa	acaacaaaac	aattactaat	gaggtacgct	gaggcctggg	2220
agtctcttga	ctccactact	taattccgtt	tagtgagaaa	cctttcaatt	ttcttttatt	2280
agaagggcca	gcttactgtt	ggtggcaaaa	ttgccaatat	aagttaatag	aaagtgggcc	2340
aatttcaccc	cattttctgt	ggtttgggct	ccacattgca	atgttcaatg	ccacgtgctg	2400
ctgacaccga	cggagtagt	agccagcaca	aaaggcaggg	tagcctgaat	tgtttctctg	2460
tctttacatt	tcttttaaaa	taagcattta	gtgctcagtc	cctactgagt	actctttctc	2520
tccctctctc	tgaatttaaa	tctttcaact	tgtcaatttg	aaggattaca	catcttactg	2580
tgatgtatat	tgtgttgcaa	aaaaaaaaaa	aagtgtcttt	gtttaaaatt	acttgggttg	2640
tgaatccatc	ttgttttttc	cccattggaa	ctagtcatta	acccatctct	gaactggtag	2700
aaaaacatct	gaagagctag	tctatcagca	tctgacaggt	gaattggatg	gttctcagaa	2760
ccatttcacc	cagacagcct	gtttctatcc	tgtttaataa	attagtttgg	gttctctaca	2820
tgcataacaa	accctgctcc	aatctgtcac	ataaaagtct	gtgacttgaa	gttttagtcag	2880

cacccccacc aaactttatt tttctatgtg ttttttgcaa C tatatgagtg ttttgaaaat 2940
 aaagtaccca tgtctttatt agaaaaaaaaa aaaaaaaaaa aaaa 2984

<210> 336
 <211> 147
 <212> PRT
 <213> Homo sapien

<400> 336
 Pro Ser Phe Pro Thr Leu Leu Ser Arg Arg His Leu Gly Ser Tyr Leu
 1 5 10 15
 Leu Asp Ser Glu Asn Thr Ser Gly Ala Leu Pro Arg Leu Pro Gln Thr
 20 25 30
 Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
 35 40 45
 Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
 50 55 60
 Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
 65 70 75 80
 Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
 85 90 95
 Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
 100 105 110
 Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
 115 120 125
 Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
 130 135 140
 Ala Phe Trp
 145

<210> 337
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 337
 Ala Leu Thr Gly Phe Thr Phe Ser Ala
 1 5

<210> 338
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 338
 Leu Leu Ala Asn Asp Leu Met Leu Ile
 1 5

<210> 339
 <211> 318
 <212> PRT
 <213> Homo sapien

<400> 339
 Met Val Glu Leu Met Phe Pro Leu Leu Leu Leu Leu Pro Phe Leu
 1 5 10 15
 Leu Tyr Met Ala Ala Pro Gln Ile Arg Lys Met Leu Ser Ser Gly Val

20 25 30
 Cys Thr Ser Thr Val Gln Leu pro Gly Lys Val Val Val Val Thr Gly
 35 40 45
 Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
 50 55 60
 Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
 65 70 75 80
 Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
 85 90 95
 Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
 100 105 110
 Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
 115 120 125
 Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met
 130 135 140
 His Ile Gly Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu
 145 150 155 160
 Leu Glu Lys Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Val Ser
 165 170 175
 Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly
 180 185 190
 Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala
 195 200 205
 Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly
 210 215 220
 Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val
 225 230 235 240
 Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe
 245 250 255
 Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu
 260 265 270
 Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His
 275 280 285
 Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg
 290 295 300
 Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp
 305 310 315

<210> 340

<211> 483

<212> DNA

<213> Homo sapien

<400> 340

gccgaggtct gccttcacac ggaggacacg agactgcttc ctcaagggtc cctgcctgcc 60
 tggacactgg tgggaggcgc tgtttagttg gctgttttca gaggggtctt tcggagggac 120
 ctctgctgc aggcaggagt gtctttatc ctggcgggag accgcacatt cactgctga 180
 ggttggtggg gcggtttatc aggcagtgat aaacataaga tgcatttcc ttgactccgg 240
 ccttcaattt tctctttggc tgacgacgga gtcctggtg tcccgatgta actgaccct 300
 gctccaaacg tgacatcact gatgctcttc tcgggggtgc tgatggccc cttggtcacg 360
 tgctcaatct cgccattoga ctcttgctcc aaactgtatg aagacacctg actgcacgtt 420
 tttctggggt ttcagaatt taaagtgaag ggcagcactc ctaagctccg actccgatgc 480
 ctg 483

<210> 341

<211> 344

<212> DNA

<213> Homo sapien

<400> 341
 ctgctgctga gtcacagatt tcattataga aagcctgag agttttctaaa ccaactctct 60
 tatttttact aaccattcta tttttaactt ctttccataa agagtagctc aaaatatgca 120
 gctgccttac aagtattaaa tattttgttt atctgcagta atagtatat catctattag 180
 attaatttaa taattttctga tgatgigaaca aaatttgtaa ccactagcac ttaagtactc 240
 aatttactta atgaaaaact gaagajaccac aagacaacca acag 300
 ctgattctta acattgtctt taat 344

<210> 342

<211> 592

<212> DNA

<213> Homo sapien

<400> 342
 aagcccaaty tgctttcttg ttaacatcca cttatccaac 60
 acagcaaaaa agaaactgaa cttgggtcca ttatgaagtt ggacaattgc tgctatcaca 120
 caatgtggaa acttctaatgc caagagagtg atggaaacca ttggcaagac tttgttgatg 180
 cctggcaggt aaacettata aaaatattgt tgatgggaag ttgctaaagg gtgaattact 240
 accaggattg gaagtgtaaag aaaagtcaga gatgctataa tagcagctat ttttaattggc 300
 tcctcagaa gacggaaagag ttctgtgtg tgctgaagtt ctgaaggga gtcaaattca 360
 aagtgccagg ctgtttggtg caaatgcaaa agcacaggtc ttttagcat gctggtctct 420
 tcagcatctct tatgcaata atcgtctct tctaaatttc tctaggctt cattttccaa 480
 cccgtctctt ggtttgtgat gtctttctg ctttccatta attctataaa atagtatggc 540
 agtttagccacc cactcttcgc cttagcttga ccgtgagctt cggctgccgc tg 592
 ttr

<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343
 ttcttgacct cctctcctt caagctcaaa caccacctcc cttattcagg accggcactt 60
 cttaattgtt gtgctttct ctccagctc tcttaggagg ggtaatggtg gaggttggcat 120
 cttgtaactc tctttctcc tttcttccc tttctctgce cgccttccc atcctgctgt 180
 agacttcttg attgtcagtc tgtgtcacat ccagtgattg ttttggtttc tgttcccttt 240
 ctgactgcc aaggggctca gaacccagc aatcccttcc tttcactacc ttcttttttg 300
 ggggtagttg gaagggactg aaattgtggg ggggaaggtg gaggcacatc aataaagagg 360
 aaaccaccaa gctgaaaaaa aa 382

<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344
 ctgggcctga agctgtaggg taaatcagag gcaggcttct gagtgatgag agtcctgaga 60
 caataggcca cataaacttg gctggatgga acctcacaat aaggtggtea cctcttgttt 120
 gtttagggg atgccaagga taaggccagc tcagttatat gaagagaagc agaacaaca 180
 agtctttcag agaaatggat gcaatcagag tgggatcccg gtcacatcaa ggtcacactc 240
 caccttcag tgctgaatg gttgccaggt cagaaaaatc cacccttac gagtgcggct 300
 tcgacctat atcccccgcc cgcgtccctt tctccataaa attcttctta gtatctatta 360
 ccttcttatt atttgatcta gaaattgcc tcttttacc cctaccatga gccctacaaa 420
 caactaacct gccactaata gttatgtcat cctcttatt aatcatcatc ctagccctaa 480
 gtctggccta tgagtgacta caaaaaggat tagactgagc cgaataacaa aaaaaa 536

<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

```

accttttgag gtctctctca ccacctccac agccaccgtc accgtgggat gtgctggatg      60
tgaatgaagc ccccatcttt gtgcctcctg aaaagagagt ggaagtgtcc gaggactttg      120
gcgtgggcca ggaaatcaca tcctacactg cccaggagcc agacacattt atggaacaga      180
aaataacata tcggatttgg agagacactg ccaactggct ggagattaat ccggacactg      240
gtgccatttc c

```

251

<210> 346

<211> 282

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (282)

<223> n = A,T,C or G

<400> 346

```

cgcgctctctg acactgtgat catgacaggg gttcaaacag aaagtgcctg ggccctcctt      60
ctaagtcttg ttacaaaaaa aaggaaaaag aaaagatctt ctcaagtaca aattctggga      120
agggagacta tacctggctc ttgccctaag tgagaggtct tcctcccgc accaaaaaat      180
agaaaggctt tctatttcac tggcccaggt agggggaagg agagtaactt tgagtctgtg      240
ggctctattt cccaaggtgc cttcaatgct catnaaaacc aa

```

282

<210> 347

<211> 201

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (201)

<223> n = A,T,C or G

<400> 347

```

acacacataa tattataaaa tgccatctaa ttggaaggag ctttctatca ttgcaagtca      60
taaataaac ttttaaaana ntactancag cttttaccta ngctcctaaa tgcttgtaaa      120
tctgagactg actggacceca cccagacceca gggcaaagat acatgttacc atatcatctt      180
tataaagaat ttttttttgt c

```

201

<210> 348

<211> 251

<212> DNA

<213> Homo sapien

<400> 348

```

ctgttaatca caacatttgt gcatcacttg tgccaagtga gaaaatgttc taaaatcaca      60
agagagaaca gtgccagaat gaaactgacc ctaagtccea ggtgcccctg ggcaggcaga      120
aggagacact cccagcatgg aggagggttt atcttttcat cctaggtcag gtctacaatg      180
ggggaagggtt ttattataga actcccaaca gccaccctca ctctgcccac ccaccgatg      240
gccctgctc c

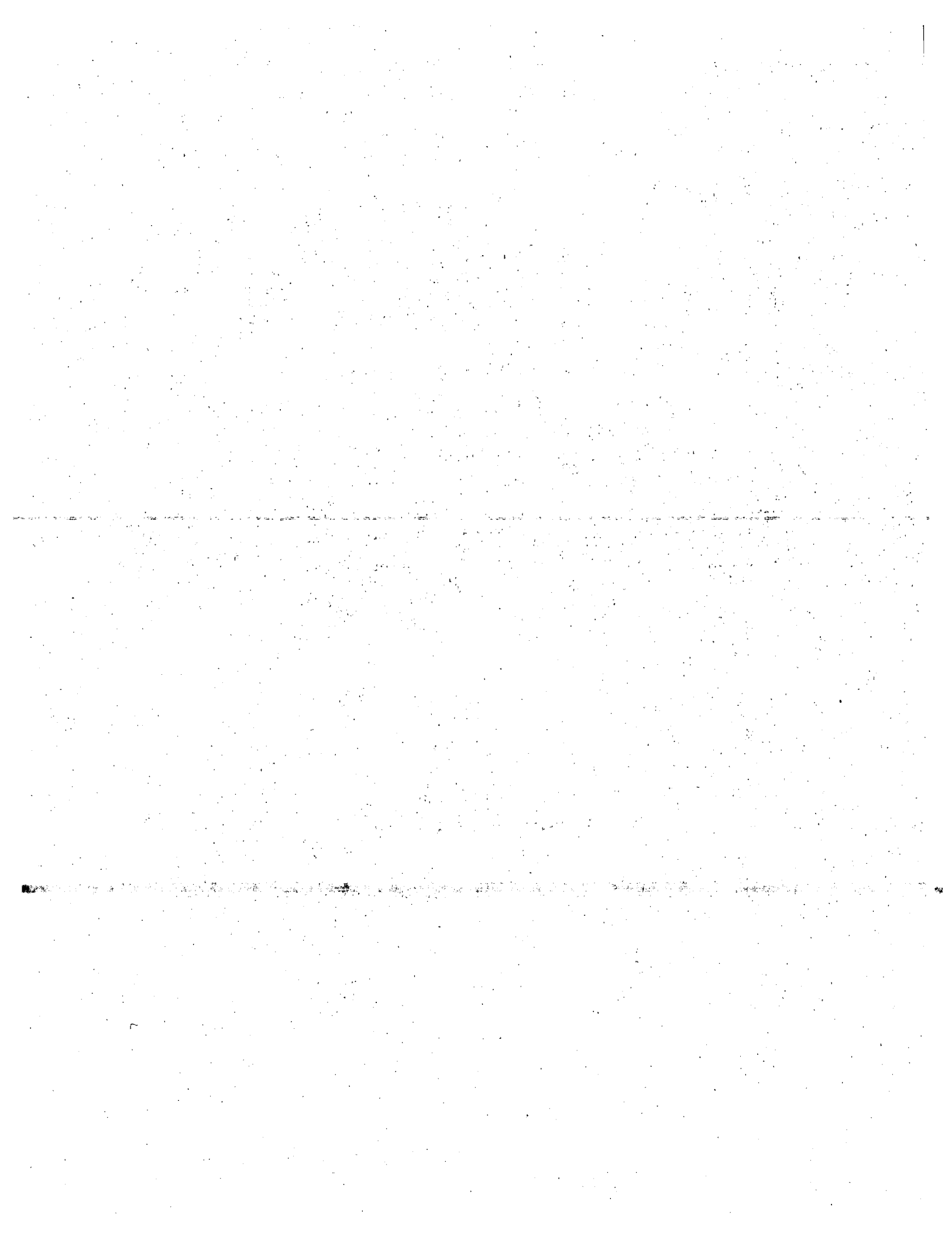
```

251

<210> 349

<211> 251

<212> DNA



<213> Homo sapien

<400> 349

taaaaatcaa gccatttaat tgtatctttg aaggtaaaca atatattgga gctggatcac	60
aacccttgag gatgccagag ctatgggtcc agaacatggg gtggtattat caacagagtt	120
cagaagggtc tgaactctac gtgttaccag agaacataat gcaattcatg cattccactt	180
agcaattttg taaaatacca gaaacagacc ccaagagtct ttcaagatga ggaaaattca	240
actcctgggt t	251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

ctggacactt tgcgagggt tttgctggct gctgctgctg cccgtcatgc tactcatcgt	60
agcccgcccg gtgaagctcg ctgctttccc tacctcctta agtgactgcc aaacgcccac	120
cggctggaat tgctctgggt atgatgacag agaaaatgat ctcttctctt gtgacaccaa	180
cacctgtaaa ttgatgggg aatgtttaag aattggagac actgtgactt gcgtctgtca	240
gttcaagtgc acaatgact atgtgcctgt gtgtggctcc aatggggaga gctaccagaa	300
tgagtgttac ctgcgacagg ctgcatgcaa acagcagagt gagatacttg tgggtgcaga	360
aggatcatgt gccacagtc atgaaggctc tggagaaact agtcaaaagg agacatccac	420
ctgtgatatt tgccagtttg gtgcagaatg tgacgaagat gccgaggatg tctggtgtgt	480
gtgtaatatt gactgttctc aaaccaactt caatccctc tgcgcttctg atgggaaatc	540
ttatgataat gcatgccaaa tcaaagaagc atcgtgtcag aaacaggaga aaattgaagt	600
catgtctttg ggtcgatgtc aagataacac aactacaact actaagtctg aagatgggca	660
ttatgcaaga acagattatg cagagaatgc taacaaatta gaagaaagtg ccagagaaca	720
ccacatacct tgtccggaac attacaatgg cttctgcacg catgggaagt gtgagcattc	780
tatcaatatg caggagccat cttgcagggt tgatgctggt tatactggac aacactgtga	840
aaaaaggac tacagtgttc tatacgttgt tcccgtcct gtacgatttc agtatgtctt	900
aatcgacg	908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

ccagttattt gcaagtggta agagcctatt taccataaat aatactaaga accaactcaa	60
gtcaaaccct aatgccattg ttattgtgaa ttaggattaa gtagtaattt tcaaaattca	120
cattaacttg attttaaaat cagwtttgyg agtcatttac cacaagctaa atgtgtacac	180
tatgataaaa acaaccattg tattcctgtt ttcttaaaac gtcttaattt ctaacactgt	240
atatatcctt cgacatcaat gaactttgtt ttcttttact ccagtaataa agtaggcaca	300
gatctgtcca caacaaactt gccctctcat gccttgctc tcaccatgct ctgctccagg	360
tcagcccccct ttggcctgt ttgttttgc aaaaacctaa tctgcttctt gcttttcttg	420
gtaatatata tttagggaag atgttgcttt gccacacac gaagcaaagt aa	472

<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

ctcaaagcta atctctcggg aatcaaacca gaaaagggca aggatcttag gcatgggtgga	60
tgtggataag gccaggtcaa tggctgcaag catgcagaga aagaggtaga tcggagcgtg	120
caggetgcgt tccgtcctta cgatgaagac cagatgcag ttccaaaca ttgccactac	180
atacatggaa aggaggggga agccaaccca gaaatgggct ttctctaata ctgggatacc	240
aataagcaca a	251

<210> 353
 <211> 436
 <212> DNA
 <213> Homo sapien

<400> 353
 tttttttttt tttttttttt tttttttacaa caatgcagtc atttatttat tgagtatgtg 60
 cacattatgg tattattact atactgatta tatttatcat gtgacttcta attaaaaat 120
 gtatccaaaa gcaaaacagc agatatacaa aattaaagag acagaagata gacattaaca 180
 gataaggcaa cttatacatt gacaatccaa atccaataca tttaaacatt tgggaaatga 240
 gggggacaaa tggaagccar atcaaatgtg tgtaaaacta ttcagtatgt ttccttgct 300
 tcatgtctga raaggctctc ccttcaatgg ggatgacaaa ctccaaatgc cacacaaatg 360
 ttaacagaat actagattca cactggaacg ggggtaaaga agaaattatt ttctataaaa 420
 gggctcctaa tgtagt 436

<210> 354
 <211> 854
 <212> DNA
 <213> Homo sapien

<400> 354
 ccttttctag ttcaccagtt ttctgcaagg atgctgggta gggagtgtct gcaggaggag 60
 caagtctgaa accaaatcta ggaaacatag gaaacgagcc aggcacaggg ctggtgggccc 120
 atcaggggacc accctttggg ttgatatttt gcttaatctg catcttttga gtaagatcat 180
 ctggcagtag aagctgttct ccagggtacat ttctctagct catgtacaaa aacatcctga 240
 aggactttgt cagggtgcctt gctaaaagcc agatgcgttc ggcacttcct tggctctgagg 300
 ttaattgcac acctacaggc actgggctca tgctttcaag tattttgtcc tcaactttagg 360
 gtgagtgaat gatccccatt ataggagcac ttgggagaga tcatataaaa gctgactctt 420
 gagtcatgac agtaattgggg tagatgtgtg tgggtgtgtct tcattcctgc aagggtgctt 480
 gttaggggagt gtttccagga ggaacaagtc tgaaaccaat catgaaataa atggtaggtg 540
 tgaactggaa aactaatcca aaagagagat cgtgatatca gtgtgggtga tacaccttgg 600
 caatatggaa ggctctaatt tgcccatatt tgaaataata attcagcttt ttgtaataca 660
 aaataacaaa ggattgagaa tcatggtgtc taatgtataa aagaccaggg aaacataaat 720
 atatcaactg cataaatgta aaatgcatgt gacccaagaa ggccccaag tggcagacaa 780
 cattgtaccc attttccctt ccaaaatgtg agcggcgggc ctgctgcttt caaggctgtc 840
 acacgggatg tcag 854

<210> 355
 <211> 676
 <212> DNA
 <213> Homo sapien

<400> 355
 gaaattaagt atgagctaaa ttccctgtta aaacctctag ggggtgacaga tctcttcaac 60
 caggtcaaaag ctgatcttct tggaaatgca ccaaccaagg gcctatatct atcaaaagcc 120
 atccacaagt catacctgga tgtcagcgaa gagggcacgg aggcagcagc agccactggg 180
 gacagcatcg ctgtaaaaag cctaccaatg agagctcagt teaaggcgaa ccaccccttc 240
 ctgttcttta taaggcacac tcataccaac acgatcctat tctgtggcaa gcttgccctc 300
 ccctaatacag atgggggtga gtaaggctca gagttgcaga tgagggtgcag agacaatcct 360
 gtgactttcc cacggccaaa aagctgttca cacctcacgc acctctgtgc ctgagtttgc 420
 tcatctgcaa aataggtcta ggatttcttc caaccatttc atgagttgtg aagctaaggc 480
 tttgttaate atggaaaaag gtagacttat gcagaaagcc tttctggctt tcttatctgt 540
 ggtgtctcat ttgagtgtct tccagtgaac tgatcaagtc aatgagtaaa attttaaggg 600
 attagatttt cttgacttgt atgtatctgt gagatcttga ataagtgacc tgacatctct 660
 gcttaaagaa aaccag 676

<210> 356

<211> 574
 <212> DNA
 <213> Homo sapien

<400> 356

tttttttttt tttttcagga aaacattctc ttactttatt tgcattctcag caaagggttct	60
catgtggcac ctgactggca tcaaaccaaa gttegttaggc caacaaagat gggccactca	120
caagcttccc attttagat ctcagtgcct atgagtatct gacacctgtt cctctcttca	180
gtctcttagg gaggtttaa tctgtctcag gtgtgctaag agtgccagcc caaggkggtc	240
aaaagtccac aaaactgcag tctttgctgg gatagtaagc caagcagtgc ctggacagca	300
gagttctttt cttgggcaac agataaccag acaggactct aatcgtgctc ttattcaaca	360
ttcttctgtc tctgcctaga ctggaataaa aagccaatct ctctcgtggc acaggggaagg	420
agatacaagc tctgtttacat gtgatagatc taacaaaggc atctaccgaa gtctgggtctg	480
gatagacggc acagggagct cttaggtcag cgctgctggg tggaggacat tcttgagtcc	540
agctttgcag cctttgtgca acagtacttt ccca	574

<210> 357
 <211> 393
 <212> DNA
 <213> Homo sapien

<400> 357

tttttttttt tttttttttt tttttttttt tacagaatat aratgcttta tcaactgkact	60
taatatggkg kcttggtcac tatacttaaa aatgcaccac tcataaatat ttaattcagc	120
aagccacaac caaracttga ttttatcaac aaaaaccctt aaatataaac ggsaaaaaag	180
atagatataa ttattccagt ttttttaaaa cttaaaarat attccattgc cgaattaara	240
araarataag tggttatatg aaagaagggc attcaagcac actaaaraaa cctgaggkaa	300
gcataatctg tacaaaatta aactgtcctt tttggcattt taacaaattt gcaacgktct	360
tttttttctt tttctgtttt tttttttttt tac	393

<210> 358
 <211> 630
 <212> DNA
 <213> Homo sapien

<400> 358

acagggtaaa caggaggatc cttgctctca cggagcttac attctagcag gaggacaata	60
ttaatgttta taggaaaatg atgagtttat gacaaaggaa gtagatagtg ttttacaaga	120
gcatagagta gggaaagctaa tccagcacag ggaggtcaca gagacatccc taaggaagtg	180
gagtttaaac tgagagaagc aagtgtctaa actgaaggat gtgttgaaga agaagggaga	240
gtagaacaat ttgggcagag ggaaccttat agaccctaag gtgggaaggt tcaaagaact	300
gaaagagagc tagaacagct ggagccgttc tccggtgtaa agaggagtca aagagataag	360
attaaagatg tgaagattaa gatcttggtg gcattcaggg attggcactt ctacaagaaa	420
tcactgaagg gagtaatgtg acattacttt tcacttcagg atggccattc taactccagg	480
gggtagactg gactaggtaa gactggaggc aggtagacct cttctaaggc ctgcgatagt	540
gaaagacaaa aataagtggg gaaattcagg ggatagttaa aatcagtagg acttaatgag	600
caagccagag gttctctcac aacaaccagt	630

<210> 359
 <211> 620
 <212> DNA
 <213> Homo sapien

<400> 359

acagcattcc aaaatataca tctagagact aarrgtaaat gctctatagt gaagaagtaa	60
taattaaaaa atgctactaa tatagaaaa ttataatcag aaaaataaat attcagggag	120
ctcaccagaa gaataaagtg ctctgccagt tattaaagga ttactgctgg tgaattaat	180
atggcattcc ccaagggaaa tagagagatt cttctggatt atgttcaata tttatttcc	240


```

aggattaact gttttaggaa cagatataaa gcttcgccac ggaagagatg gacaaagcac 300
aaagacaaca tgatacctta ggaagcaaca ctaccctttc aggcataaaa tttggagaaa 360
tgcaacatta tgcttcatga ataatatgta gaaagaaggt ctgatgaaaa tgacatcctt 420
aatgtaagat aactttataa gaattctggg tcaaataaaa ttctttgaag aaaacatcca 480
aatgtcattg acttatcaaa tactatcttg gcatataacc tatgaaggca aaactaaaca 540
aacaaaaagc tcacaccaa caaaaccatc aacttatttt gtattctata acatacgaga 600
ctgtaaagat gtgacagtgt 620

```

```

<210> 360
<211> 431
<212> DNA
<213> Homo sapien

```

```

<400> 360
aaaaaaaaa agccagaaca acatgtgata gataatatga ttggctgcac acttcagac 60
tgatgaatga tgaacgtgat ggactattgt atggagcaca tcttcagcaa gaggggaaa 120
tactcatcat ttttgccag cagttgtttg atcaccaaac atcatgccag aatactcagc 180
aaaccttctt agctcttgag aagtcaaagt ccgggggaat ttattcctgg caattttaat 240
tggactcctt atgtgagagc agcggctacc cagctggggt ggtggagcga acccgctact 300
agtggacatg cagtggcaga gctcctggta accacctaga ggaatacaca ggcacatgtg 360
tgatgccaa gctgacacct gtagcactca aatttgtctt gtttttgtct ttcggtgtgt 420
agattcttag t 431

```

```

<210> 361
<211> 351
<212> DNA
<213> Homo sapien

```

```

<400> 361
acactgattt ccgatcaaaa gaatcatcat ctttaccttg acttttcagg gaattactga 60
actttcttct cagaagatag ggcacagcca ttgccttggc ctcacttgaa gggctctgcat 120
ttgggtcctc tggctctctg ccaagtttcc cagccactcg agggagaaat atcgggaggt 180
ttgacttctc ccggggcttt ccgagggtc tcaccgtgag cctgcggcc ctcagggtctg 240
caatcctgga ttcaatgtct gaaacctcgc tctctgcctg ctggacttct gagggcgtca 300
ctgccactct gtcctccagc tctgacagct cctcatctgt ggtcctgtgt t 351

```

```

<210> 362
<211> 463
<212> DNA
<213> Homo sapien

```

```

<400> 362
acttcatcag gccataatgg gtgcctcccg tgagaatcca agcacctttg gactgcgcga 60
ttagatgag ccggctgaag atcttgcgca tgcgcggctt cagggcgaag ttcttggcgc 120
ccccggtcac agaaatgacc aggttgggtg ttttcagggt ccagtgtctg gtcagcagct 180
cgtaaaggat ttccgcgtcc gtgtcgcagg acagacgtat atacttccct ttcttcccca 240
gtgtctcaaa ctgaatatcc ccaaaggcgt cggtaggaaa ttccttgggt tgtttcttgt 300
agttccattt ctacttttgg ttgatctggg tgccttccat gtgctggctc tgggcatagc 360
cacacttgca cacattctcc ctgataagca cgatgggtgt gacagggaagg aaggatttca 420
ttgagcctgc ttatggaaac tggatttgtt agcttaaata gac 463

```

```

<210> 363
<211> 653
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature

```


<222> (1) ... (653)

<223> n = A,T,C or G

<400> 363

acccccgagt	ncctgnctgg	catactgnga	acgaccaacg	acacacccaa	gctcggcctc	60
ctcttgngga	ttctgggtga	catcttcatg	aatggcaacc	gtgccagwga	ggctgtcctc	120
tgggaggcac	tacgcaagat	gggactgegt	cctgggggtga	gacatcctct	ccttgagat	180
ctaaccgaaac	ttctcaccta	tgagttgtaa	agcagaaata	cctgnactac	agacgagtgc	240
ccaacagcaa	ccccccggaa	gtatgagttc	ctctrggggc	tccgttccta	ccatgagasc	300
tagcaagatg	naagtgttga	gantcattgc	agaggttcag	aaaagagacc	cntcgtgact	360
ggtctgcaca	gttcatggag	gctgcagatg	aggccttgga	tgctctggat	gctgctgcag	420
ctgaggccga	agcccgggct	gaagcaagaa	cccgcattgg	aattggagat	gaggctgtgt	480
ntgggcccctg	gagctgggat	gacattgagt	ttgagctgct	gacctgggat	gaggaaggag	540
atthtgagga	tcctnggtcc	agaattccat	ttacctctctg	ggccagatac	caccagaatg	600
cccgtccag	attccctcag	acctttgccc	gtcccattat	tggtctstggt	ggt	653

<210> 364

<211> 401

<212> DNA

<213> Homo sapien

<400> 364

actagaggaa	agacgttaaa	ccactctact	accacttgtg	gaactctcaa	agggtaaatg	60
acaaagccaa	tgaatgactc	taaaaacaat	atthacattt	aatggtttgt	agacaataaa	120
aaaacaaggt	ggatagatct	agaattgtaa	cattttaaga	aaaccatagc	atthgacaga	180
tgagaaagct	caattataga	tgcaaagtta	taactaaact	actatagtag	taaagaaata	240
catttcacac	ccttcatata	aattcactat	cttggcttga	ggcactccat	aaaatgtatc	300
acgtgcatag	taaatcttta	tatttgctat	ggcgttgcac	tagaggactt	ggactgcaac	360
aagtggatgc	gcggaaaatg	aaatcttctt	caatagccca	g		401

<210> 365

<211> 356

<212> DNA

<213> Homo sapien

<400> 365

ccagtgtcat	atthgggctt	aaaatttcaa	gaagggcact	tcaaatggct	ttgcatttgc	60
atgtttcagt	gctagagcgt	aggaatagac	cctggcgctc	actgtgagat	gttcttcagc	120
taccagagca	tcaagtctct	gcagcaggtc	attcttgggt	aaagaaatga	cttccacaaa	180
ctctccatcc	cctggctttg	gcttcggcct	tgcgctttcg	gcacatctc	cgttaatggt	240
gactgtcacg	atgtgtatag	tacagtttga	caagcctggg	tccatacaga	ccgctggaga	300
acattcggca	atgtccctt	tgtagccagt	ttcttcttcg	agctcccga	gagcag	356

<210> 366

<211> 1851

<212> DNA

<213> Homo sapien

<400> 366

tcacaccat	tgccagcagc	ggcaccgtta	gtcaggtttt	ctgggaatcc	cacatgagta	60
cttccgtgtt	cttcattctt	cttcaatagc	cataaatctt	ctagctctgg	ctggctgttt	120
tcaacttctt	taagcctttg	tgactcttcc	tctgatgtca	gctttaagtc	ttgttctgga	180
ttgtgtttt	cagaagagat	ttttaacatc	tgtttttctt	tgtagtcaga	aagtaactgg	240
caaattacat	gatgatgact	agaaacagca	tactctctgg	ccgtctttcc	agatcttgag	300
aagatacatc	aacatttttg	tcaagtagag	ggctgactat	acttgctgat	ccacaacata	360
cagcaagtat	gagagcagtt	cttccatate	tatccagcgc	atttaaatcc	gcttttttct	420
tgattaaaaa	tttcaccact	tgctgttttt	gctcatgtat	accaagtagc	agtgggtgtg	480
ggccatgctt	gttttttgat	tcgatatcag	caccgtataa	gagcagtgct	ttggccatta	540

atztatcttc	attgtagaca	gcatagtgtg	gagtggtatt	tccatactca	tctggaatat	600
ttggatcagt	gccatgttcc	agcaacatta	acgcacattc	atcttcctgg	cattgtacgg	660
cctttgtcag	agctgtcctc	tttttgttgt	caaggacatt	aagttgacat	cgtctgtcca	720
gcacgagttt	tactacttct	gaattcccat	tggcagaggc	cagatgtaga	gcagtcctct	780
tttgcttgct	cctcttggtc	acatccgtgt	ccctgagcat	gacgatgaga	tcctttcttg	840
ggactttacc	ccaccaggca	gctctgtgga	gcttgtccag	atcttctcca	tggacgtggt	900
acctgggac	catgaaggcg	ctgtcatcgt	agtctcccca	agcgaccacg	ttgctcttgc	960
cgctccccctg	cagcagggga	agcagtggca	gcaccacttg	cacctcttgc	tcccaagcgt	1020
cttcacagag	gagtcgttgt	ggtctccaga	agtgccacag	ttgctcttgc	cgctccccct	1080
gtccatccag	ggaggaagaa	atgcaggaaa	tgaaagatgc	atgcacgatg	gtatactcct	1140
cagccataca	acttctggac	agcaggtcac	ttccagcaag	gtggagaaaag	ctgtccaccc	1200
acagaggatg	agaatccagaa	accacaatat	ccattcacaa	acaaacactt	ttcagccaga	1260
cacagggtact	gaaatcatgt	catctgcggc	aacatggtgg	aacctaccca	atcacacatc	1320
aagagatgaa	gacactgcag	tatatctgca	caacgtaata	ctcttcatcc	ataacaaaat	1380
aatataat	tcctctggag	ccatatggat	gaactatgaa	ggaagaactc	cccgaagaag	1440
ccagtcgcag	agaagccaca	ctgaagctct	gtcctcagcc	atcagcgcca	cggacaggag	1500
tgtgtttctt	ccccagtgat	gcagcctcaa	gttatcccga	agctgccgca	gcacacgggt	1560
gctcctgaga	aacaccccag	ctcttccggg	ctaacacagg	caagtcaata	aatgtgataa	1620
tcacataaac	agaattaaaa	gcaaagtcac	ataagcatct	caacagacac	agaaaaggca	1680
tttgacaaaa	tccagcatcc	ttgtatttat	tgttgcagtt	ctcagaggaa	atgcttctaa	1740
cttttcccca	tttagtatta	tgttggtgtg	gggcttgtea	taggtggttt	ttattacttt	1800
aagggtatg	ccttctatgc	ctgttttgct	gagggtttta	attctcgtgc	c	1851

<210> 367

<211> 668

<212> DNA

<213> Homo sapien

<400> 367

cttgagcttc	caaataygga	agactggccc	ttacacasgt	caatgttaaa	atgaatgcac	60
ttcagtattt	tgaagataaa	atrrgtagat	ctataccttg	ttttttgatt	cgatatcagc	120
accrtataag	agcagtgtct	tggccattaa	tttatcttcc	atrrtagaca	gcrtagtgya	180
gagtggtatt	tccatactca	tctggaatat	ttggatcagt	gccatgttcc	agcaacatta	240
acgcacattc	atcttcctgg	cattgtacgg	cctgtcagta	ttagacccaa	aaacaaatta	300
catatcttag	gaattcaaaa	taacattcca	cagctttcac	caactagtta	tatttaaagg	360
agaaaactca	tttttatgcc	atgtattgaa	atcaaaccda	cctcatgctg	atatagtgg	420
ctactgcata	cctttatcag	agctgtcctc	tttttgttgt	caaggacatt	aagttgacat	480
cgctgttcca	gcaggagttt	tactacttct	gaattcccat	tggcagaggc	cagatgtaga	540
gcagtcctat	gagagtgaga	agacttttta	ggaaattgta	gtgcactagc	tacagccata	600
gcaatgatcc	atgtaactgc	aaacactgaa	tagcctgcta	ttactctgcc	ttcaaaaaaa	660
aaaaaaaa						668

<210> 368

<211> 1512

<212> DNA

<213> Homo sapien

<400> 368

gggtcgccca	gggggsgcgt	gggctttcct	cggggtgggtg	tgggttttcc	ctgggtgggg	60
tgggctgggc	trgaatcccc	tgtctggggt	ggcagggtttt	ggctgggatt	gacttttytc	120
ttcaaacaga	ttggaaaccc	ggagttacct	gctagttggt	gaaactgggt	ggtagacggc	180
atctgttggc	tactactggc	ttctcctggc	tgttaaaaagc	agatgggtggt	tgaggttgat	240
tccatgcggg	ctgcttcttc	tgtgaagaag	ccatttggtc	tcaggagcaa	gatgggcaag	300
tgggtctgce	tgtgcttccc	ctgctgcagg	gagagcggca	agagcaacgt	gggcacttct	360
ggagaccacg	acgactctgc	tatgaagaca	ctcaggagca	agatgggcaa	gtgggtccgc	420
cactgcttcc	cctgctgcag	ggggagtggc	aagagcaacg	tgggcgcttc	tggagaccac	480
gacgaytctg	ctatgaagac	actcaggaac	aagatgggca	agtgggtgctg	ccactgcttc	540
ccctgctgca	gggggagcrg	caagagcaag	gtgggcgctt	ggggagacta	cgatgacagt	600

```

gccttcatgg agcccaggta ccacgtccgt ggagaagatc tggacaagct ccacagagct 660
gcctgggtggg gtaaagtccc cagaaaggat ctcacgtcga tgctcagggg cactgacgtg 720
aacaagaagg acaagcaaaa gaggactgct ctacatctgg cctctgccaa tgggaattca 780
gaagtagtaa aactcstgct ggacagacga tgtcaactta atgtccttga caacaaaaag 840
aggacagctc tgayaaaggc cgtacaatgc caggaagatg aatgtgcgtt aatgttgctg 900
gaacatggca ctgatccaaa tattccagat gagtatggaa ataccactct rcactaygct 960
rtctayaatg aagataaatt aatggccaaa gcactgctct tatayggtgc tgatatcgaa 1020
tcaaaaaaca aggtatagat ctactaattt tatcttcaaa atactgaaat gcattcattt 1080
taacattgac gtgtgtaagg gccagtcttc cgtatttggg agctcaagca taacttgaat 1140
gaaaatattt tgaaatgacc taattatctm agactttatt ttaaattatt ttattttcaa 1200
agaagcatta gagggtagag tttttttttt ttaaattgac ttctggtaaa tacttttggg 1260
gaaaacactg aatttgtaaa aggtaatatc tactattttt caatttttcc ctctaggat 1320
ttttttcccc taatgaatgt aagatggcaa aatttgccct gaaatagggt ttacatgaaa 1380
actccaagaa aagttaaaca tgtttcagtg aatagagatc ctgctccttt ggcaagttcc 1440
taaaaaacag taatagatac gaggtgatgc gcctgtcagt ggcaagggtt aagatatttc 1500
tgatctcgtg cc 1512

```

<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

```

gggtcgccca gggggsgcgt gggctttcct cgggtgggtg tgggttttcc ctgggtgggg 60
tgggtcgggc trgaatcccc tgctgggggt ggaggtttt ggctgggatt gacttttytc 120
ttcaaacaga ttggaaaccc ggagttacct gctagtgggt gaaactgggt ggtagacgag 180
atctgttggc tactactggc ttctctgggc tggtaaaagc agatgggtgg tgaggttgat 240
tccatgccgg ctgcttcttc tgtgaagaag ccatttgggt tcaggagcaa gatgggcaag 300
tgggtgctgc gttgcttccc ctgctgcagg gagagcggca agagcaacgt gggcacttct 360
ggagaccacg acgactctgc tatgaagaca ctcaggagca agatgggcaa gtggtgccgc 420
cactgcttcc cctgctgcag ggggagtggt aagagcaacg tgggcgcttc tggagaccac 480
gacgaytctg ctatgaagac actcaggaac aagatgggca agtgggtgctg ccactgcttc 540
ccctgctgca gggggagcrg caagagcaag gtgggcgctt ggggagacta cgtgacaggy 600
gccttcattg akcccaggta ccacgtccrt ggagaagatc tggacaagct ccacagagct 660
gcttgggtgg gtaaagtccc cagaaaggat ctcacgtcga tgctcagggg cackgaygtg 720
aacaagargg acaagcaaaa gaggactgct ctacatctgg cctctgccaa tgggaattca 780
gaagtagtaa aactcstgct ggacagacga tgtcaactta atgtccttga caacaaaaag 840
aggacagctc tgayaaaggc cgtacaatgc caggaagatg aatgtgcgtt aatgttgctg 900
gaacatggca ctgatccaaa tattccagat gagtatggaa ataccactct rcactaygct 960
rtctayaatg aagataaatt aatggccaaa gcactgctct tatayggtgc tgatatcgaa 1020
tcaaaaaaca agcatggcct cacaccactg ytacttggtr tacatgagca aaaacagcaa 1080
gtsgtgaaat ttttaatyaa gaaaaaagcg aattttaaag gcrctggata gatatggaag 1140
ractgctctc atacttgctg tatgttggtg atcagcaagt atagtacgcc ytctacttga 1200
gcaaaatrtt gatgtatctt ctcaagatct ggaaagacgg ccagagagta tgctgtttct 1260
agtcatcatc atgtaatttg ccagttaact tctgactaca aagaaaaaca gatgttaaaa 1320
atctcttctg aaaacagcaa tccagaacaa gacttaaagc tgacatcaga ggaagagtca 1380
caaaggctta aaggaagtga aaacagccag ccagaggcat ggaaactttt aaatttaaac 1440
ttttgggtta atgttttttt tttttgcctt aataatatta gatagtccca aatgaaatwa 1500
cctatgagac taggctttga gaatcaatag attctttttt taagaatctt ttggctagga 1560
gcggtgtctc acgctgttaa ttccagcacc ttgagaggct gaggtgggca gatcacgaga 1620
tcaggagatc gagaccatcc tggctaacac ggtgaaaccc catctctact aaaaatacaa 1680
aaacttagct ggggtgtggtg gcgggtgcct gtagtcccag ctactcagga rgctgaggca 1740
ggagaatggc atgaaccggg gaggtggagg ttgcagttag ccgagatccg ccactacact 1800
ccagcctggg tgacagagca agactctgtc tcaaaaaaaaa aaaaaaaaaa aaa 1853

```

<210> 370

<211> 2184

<212> DNA

<213> Homo sapien

<400> 370

```

ggcacgagaa ttaaaaccct cagcaaaaca ggcatagaag ggacatacct taaagtaata      60
aaaaccacct atgacaagcc cacagccaac ataatactaa atggggaaaa gttagaagca      120
tttcctctga gaactgcaac aataaatata aggatgctgg attttgtcaa atgccttttc      180
tgtgtctgtt gagatgctta tgtgactttg cttttaattc tgtttatgtg attatcacat      240
ttattgactt gctgtgttta gaccggaaga gctggggtgt ttctcaggag ccaccgtgtg      300
ctgcggcagc ttccggataa cttgaggctg catcactggg gaagaaacac aytccgtgtc      360
gtggcgctga tggctgagga cagagcttca gtgtggcttc tctgcgactg gcttcttcgg      420
ggagttcttc cttcatagtt catccatag gctccaggag aaaattatat tattttgtta      480
tggatgaaga gtattacgtt gtgcagatat actgcagtgt cttcatctct tgatgtgtga      540
ttgggtaggt tccaccatgt tgccgcagat gacatgattt cagtacctgt gtctggctga      600
aaagtgtttg ttgtgaaatg gatattgtgg ttcttggaat tcatcctctg tgggtggaca      660
gctttctcca ccttgcctga agtgacctgc tgtccagaag ttgatggct gaggagtata      720
ccatcgtgca tgcactcttc atttctgca tttcttctc cctggatgga cagggggagc      780
ggcaagagca acgtgggcac ttctggagac cacaacgact cctctgtgaa gacgcttggg      840
agcaagaggt gcaagtgtg ctgccactgc tccccctgct gcaggggagc ggcaagagca      900
acgtggtcgc ttggggagac tacgatgaca gcgccttcat ggatcccagg taccagtcc      960
atggagaaga tctggacaag ctccacagag ctgcctgggt gggtaaagtc cccagaaagg      1020
atctcatcgt catgctcagg gacacggatg tgaacaagag ggacaagcaa aagaggactg      1080
ctctacatct ggctctgcc aatgggaatt cagaagtagt aaaactcgtg ctggacagac      1140
gatgtcaact taatgtcctt gacaacaaaa agaggacagc tctgacaaag gccgtacaat      1200
gccaggaaga tgaatgtgcg ttaatgttgc tggacatgg cactgatcca aatattccag      1260
atgagtatgg aaataccact ctacactatg ctgtctacaa tgaagataaa ttaatggcca      1320
aagcactgct cttatacggg gctgatatcg aatcaaaaaa caagcatggc ctccacaccac      1380
tgctacttgg tatacatgag caaaaacagc aagtgggtgaa atttttaatc aagaaaaaag      1440
cgaatttaaa tgcgctggat agatatggaa gaactgctct catacttgct gtatgttgtg      1500
gatcagcaag tatagtcagc cctctacttg agcaaaatgt tgatgtatct tctcaagatc      1560
tggaagagac gccagagagt atgctgtttc tagtcatcat catgtaattt gccagtact      1620
ttctgactac aaagaaaaac agatgttaaa aatctcttct gaaaacagca atccagaaca      1680
agacttaaaag ctgacatcag aggaagagtc acaaaggctt aaaggaagtg aaaacagcca      1740
gccagaggca tggaaacttt taaatttaaa cttttggttt aatgtttttt tttttgcct      1800
taataatatt agatagtcct aaatgaaatw acctatgaga ctaggctttg agaatacaata      1860
gattcttttt ttaagaatct tttggctagg agcgggtgtc cagcctgtg attccagcac      1920
cttgagagggc tgagggtggc agatcacgag atcaggagat cgagaccatc ctggctaaca      1980
cggtgaaacc ccatctctac taaaaatata aaaacttagc tgggtgtggt ggcggtgtgc      2040
tgtagtccca gctactcagg argctgagggc aggagaatgg catgaacccg ggaggtggag      2100
gttgagtgga gccgagatcc gccactacac tccagcctgg gtgacagagc aagactctgt      2160
ctcaaaaaaa aaaaaaaaaa aaaa

```

<210> 371

<211> 1855

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (1855)

<223> n = A,T,C or G

<400> 371

```

tgcacgcac gccagtgct tgtgccacgt aactgacgc ccctgagat gtgcacgcc      60
cacgcgcac ttgcacgcgc ggcagcggct tggctggctt gtaacggctt gcacgcgcac      120
gccgccccgc cataaccgct agactggcct gtaacggctt gcaggcgcac gccgcacgcg      180
gtaacggctt tggctgcct gtaacggctt gcacgtgcat gctgcacgcg cgttaacggc      240
ttggctggca tgtagccgct tggcttggct ttgcttggct tggcttggct tggcttggct      300
tcttggattg acgttctct cttggatkgc cgtttctctc ttggatkgac gtttctyty      360

```

tcgcgttctt	ttgctggact	tgacctttty	tctgctgggt	ttggcattcc	tttgggggtgg	420
gctgggtggt	ttctccgggg	gggkktgccc	ttctggggt	gggcgtgggk	cgccccagg	480
gggcgtgggc	tttccccggg	tgggtgtggg	ttttctggg	gtgggtggg	ctgtgctggg	540
atccccctgc	tggggttggc	agggattgac	ttttttcttc	aaacagattg	gaaacccgga	600
gtaacntgct	agtgtgtgaa	actggttggg	agacgcgac	tgctggtact	actgtttctc	660
ctggctgtta	aaagcagatg	gtggctgagg	ttgattcaat	gccggctgct	tcttctgtga	720
agaagccatt	tggtctcagg	agcaagatgg	gcaagtgggt	cgccactgct	tcccctgctg	780
cagggggagc	ggcaagagca	acgtgggcac	ttctggagac	cacaacgact	cctctgtgaa	840
gacgcttggg	agcaagaggt	gcaagtgggt	ctgccactg	cttccccctgc	tgcaggggag	900
cggcaagagc	aaagtggtcg	cttggggaga	ctacgatgac	agcgccttca	tggakcccag	960
gtaccacgtc	crtggagaag	atctggacaa	gctccacaga	gctgcctggt	ggggtaaaagt	1020
ccccagaaag	gatctcatcg	tcagtctcag	ggacactgay	gtgaacaaga	rggacaagca	1080
aaagaggact	gctctacatc	tggcctctgc	caatgggaat	tcagaagtag	taaaactcgt	1140
gctggacaga	cgatgtcaac	ttaatgtcct	tgacaacaaa	aagaggacag	ctctgacaaa	1200
ggcctacaaa	tgccaggaag	atgaatgtgc	gttaatgttg	ctggaacatg	gcactgatcc	1260
aaatattcca	gatgagtatg	gaaataccac	tctacactat	gctgtctaca	atgaagataa	1320
attaatggcc	aaagcactgc	tcttatacgg	tgctgatatc	gaatcaaaaa	acaaggtata	1380
gatctactaa	ttttatcttc	aaaatactga	aatgcattca	ttttaacatt	gacgtgtgta	1440
agggccagtc	ttcgtatttt	ggaagctcaa	gcataacttg	aatgaaaata	ttttgaaatg	1500
acctaattat	ctaagacttt	attttaataa	ttgttatttt	caaagaagca	ttagagggtg	1560
cagttttttt	tttttaaatg	cacttctggt	aaatactttt	gttgaaaaca	ctgaatttgt	1620
aaaaggtaat	acttactatt	tttcaatttt	tccctcttag	gatttttttc	ccctaatagaa	1680
tgtaagatgg	caaaatttgc	cctgaaatag	gttttacatg	aaaactccaa	gaaaagttaa	1740
acatgtttca	gtgaatagag	atcctgctcc	tttggcaagt	tcctaaaaaa	cagtaataga	1800
tacgaggtga	tgcgcctgtc	agtggcaagg	tttaagatat	ttctgatctc	gtgcc	1855

<210> 372

<211> 1059

<212> DNA

<213> Homo sapien

<400> 372

gcaacgtggg	cacttctgga	gaccacaacg	actcctctgt	gaagacgctt	gggagcaaga	60
ggtgcaagtg	gtgctgcccc	ctgcttcccc	tgtctgcagg	gagcggcaag	agcaacgtgg	120
gcgcttgrrg	agactmcgat	gacagygcct	tcattggagc	cagggtaccac	gtccgtggag	180
aagatctgga	caagctccac	agagctgccc	tgggtgggta	aagtccccag	aaaggatctc	240
atcgctcatg	tcagggaac	tgaygtgaac	aagarggaca	agcaaaagag	gactgctcta	300
catctggcct	ctgccaatgg	gaattcagaa	gtagtaaaac	tcstgctgga	cagacgatgt	360
caacttaatg	tccttgacaa	caaaaagagg	acagctctga	yaaaggccgt	acaatgccag	420
gaagatgaat	gtgcgttaat	gttgcgtgaa	catggcactg	atccaaatat	tccagatgag	480
tatggaaata	ccactctrca	ctaygctrct	tayaatgaag	ataaattaat	ggccaaagca	540
ctgctcttat	ayggtgctga	tatcgaatca	aaaaacaagg	tatagatcta	ctaattttat	600
cttcaaaata	ctgaaatgca	ttcattttta	cattgacgtg	tgtaaggggc	agtcttccgt	660
atttgggaag	tcaagcataa	cttgaatgaa	aatattttga	aatgacctaa	ttatctaaga	720
ctttattttt	aatattgtta	ttttcaaga	agcattagag	ggtacagttt	ttttttttta	780
aatgcacttc	tggtaaatac	ttttgttgaa	aaactgaat	ttgtaaaagg	taatacttac	840
tatttttcaa	tttttccctc	ctaggatttt	tttcccctaa	tgaatgtaag	atggcaaaat	900
ttgccttgaa	ataggtttta	catgaaaact	ccaagaaaag	ttaaaccatg	ttcagtgaat	960
agagatcctg	ctcctttggc	aagttcctaa	aaaacagtaa	tagatacgag	gtgatgcgcc	1020
tgtcagtggc	aaggtttaag	atatttctga	tctcgtgcc			1059

<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

atggtggttg	aggttgattc	catgccggct	gcctctctg	tgaagaagcc	atttggcttc	60
------------	------------	------------	-----------	------------	------------	----

aggagcaaga	tgggcaagt	gtgctgccgt	tgcttcccct	gctgcaggga	gagcggcaag	120
agcaacgtgg	gcacttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcaag	180
atgggcaagt	ggtgccgcca	ctgcttcccc	tgctgcagg	ggagtggcaa	gagcaacgtg	240
ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcaggaacaa	gatgggcaag	300
tggtgctgcc	actgcttccc	ctgctgcagg	gggagcggca	agagcaaggt	gggcgcttgg	360
ggagactacg	atgacagtgc	cttcatggag	cccagggtacc	acgtccgtgg	agaagatctg	420
gacaagctcc	acagagctgc	ctggtgggg	aaagtcccca	gaaaggatct	catcgtcatg	480
ctcagggaca	ctgacgtgaa	caagaaggac	aagcaaaaga	ggactgctct	acatctggcc	540
tctgccaatg	ggaattcaga	agtagtaaaa	ctcctgctgg	acagacgatg	tcaacttaat	600
gtccttgaca	acaaaaagag	gacagctctg	ataaaggccg	tacaatgcca	ggaagatgaa	660
tgtgcgttaa	tggtgctgga	acatggcact	gatccaaata	ttccagatga	gtatggaaat	720
accactctgc	actacgctat	ctataatgaa	gataaattaa	tggccaaagc	actgctctta	780
tatggtgctg	atatcgaatc	aaaaaacaag	catggcctca	caccactgtt	acttgggtgta	840
catgagcaaa	aacagcaagt	cgtgaaat	ttaatcaaga	aaaaagcgaa	tttaaatgca	900
ctggatagat	atggaaggac	tgctctcata	cttgcgtgat	gttgtggatc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcacatc	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aatctcttct	gaaaacagca	atccagaaaa	tgtctcaaga	1140
accagaaata	aataa					1155

<210> 374

<211> 2000.

<212> DNA

<213> Homo sapien

<400> 374

atggtggttg	aggttgatc	catgccggct	gcctcttctg	tgaagaagcc	atttggctct	60
aggagcaaga	tgggcaagt	gtgctgccgt	tgcttcccct	gctgcaggga	gagcggcaag	120
agcaacgtgg	gcacttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcaag	180
atgggcaagt	ggtgccgcca	ctgcttcccc	tgctgcagg	ggagtggcaa	gagcaacgtg	240
ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcaggaacaa	gatgggcaag	300
tggtgctgcc	actgcttccc	ctgctgcagg	gggagcggca	agagcaaggt	gggcgcttgg	360
ggagactacg	atgacagtgc	cttcatggag	cccagggtacc	acgtccgtgg	agaagatctg	420
gacaagctcc	acagagctgc	ctggtgggg	aaagtcccca	gaaaggatct	catcgtcatg	480
ctcagggaca	ctgacgtgaa	caagaaggac	aagcaaaaga	ggactgctct	acatctggcc	540
tctgccaatg	ggaattcaga	agtagtaaaa	ctcctgctgg	acagacgatg	tcaacttaat	600
gtccttgaca	acaaaaagag	gacagctctg	ataaaggccg	tacaatgcca	ggaagatgaa	660
tgtgcgttaa	tggtgctgga	acatggcact	gatccaaata	ttccagatga	gtatggaaat	720
accactctgc	actacgctat	ctataatgaa	gataaattaa	tggccaaagc	actgctctta	780
tatggtgctg	atatcgaatc	aaaaaacaag	catggcctca	caccactgtt	acttgggtgta	840
catgagcaaa	aacagcaagt	cgtgaaat	ttaatcaaga	aaaaagcgaa	tttaaatgca	900
ctggatagat	atggaaggac	tgctctcata	cttgcgtgat	gttgtggatc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcacatc	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aatctcttct	gaaaacagca	atccagaaca	agacttaaag	1140
ctgacatcag	aggaagagtc	acaaagggtc	aaaggcagtg	aaaatagcca	gccagagaaa	1200
atgtctcaag	aaccagaaat	aaataaggat	ggtgatagag	aggttgaaga	agaaatgaag	1260
aagcatgaaa	gtaataatgt	gggattacta	gaaaacctga	ctaattggtg	cactgctggc	1320
aatggtgata	atggattaat	tcctcaaagg	aagagcagaa	cacctgaaaa	tcagcaat	1380
cttgacaacg	aaagtgaaga	gtatcacaga	atttgcgaa	tagtttctga	ctacaaagaa	1440
aaacagatgc	caaaatactc	ttctgaaaac	agcaaccag	aacaagactt	aaagctgaca	1500
tcagaggaag	agtcacaaag	gcttgagggc	agtgaataatg	gccagccaga	gctagaaaat	1560
tttatggcta	tcgaagaaat	gaagaagcac	ggaagtactc	atgtcggatt	cccagaaaac	1620
ctgactaatg	gtgccactgc	tggcaatgg	gatgatggat	taattcctcc	aaggaagagc	1680
agaacacctg	aaagccagca	atttctgac	actgagaatg	aagagtatca	cagtgcagaa	1740
caaatgata	ctcagaagca	attttgtgaa	gaacagaaca	ctggaatatt	acacgatgag	1800
attctgattc	atgaagaaaa	gcagatagaa	gtggttgaaa	aaatgaattc	tgagctttct	1860
cttagttgta	agaaagaaaa	agacatcttg	catgaaaata	gtacgttgcg	ggaagaaatt	1920

gccatgctaa gactggagct agacacaatg aaacatcaga gccagctaaa aaaaaaaaaa 1980
 aaaaaaaaaa aaaaaaaaaa 2000

<210> 375

<211> 2040

<212> DNA

<213> Homo sapien

<400> 375

atggtggttg	aggttgattc	catgcccggct	gcctcttctg	tgaagaagcc	atttgggtctc	60
aggagcaaga	tgggcaagt	gtgctgccgt	tgcttcccct	gctgcaggga	gagcggcaag	120
agcaacgtgg	gcacttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcaag	180
atgggcaagt	ggtgccgcca	ctgcttcccc	tgctgcagg	ggagtggcaa	gagcaacgtg	240
ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcaggaacaa	gatgggcaag	300
tggtgctgcc	actgcttccc	ctgctgcagg	gggagcggca	agagcaaggt	ggcgcttgg	360
ggagactacg	atgacagtgc	cttcatggag	cccaggtacc	acgtccgtgg	agaagatctg	420
gacaagctcc	acagagctgc	ctgggtgggt	aaagtcccca	gaaaggatct	catcgctatg	480
ctcagggaca	ctgacgtgaa	caagaaggac	aagcaaaaga	ggactgctct	acatctggcc	540
tctgccaatg	ggaattcaga	agtagtaaaa	ctcctgctgg	acagacgatg	tcaacttaat	600
gtccttgaca	acaaaaagag	gacagctctg	ataaaggccg	tacaatgcca	ggaagatgaa	660
tgtgcgttaa	tgttgctgga	acatggcact	gatccaaata	ttccagatga	gtatggaaat	720
accactctgc	actacgctat	ctataatgaa	gataaattaa	tggccaaagc	actgctctta	780
tatggtgctg	atatcgaatc	aaaaaacaag	catggccctca	caccactggt	acttgggtga	840
catgagcaaa	aacagcaagt	cgtgaaatct	ttaatcaaga	aaaaagcgaa	tttaaattga	900
ctggtatgat	atggaaggac	tgctctcata	cttctgtgat	gttggtggtc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gacagagagt	atgctgttcc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aatctcttct	gaaaacagca	atccagaaca	agacttaaa	1140
ctgacatcag	aggaagagtc	acaaagggtc	aaaggcagtg	aaaatagcca	gccagagaaa	1200
atgtctcaag	aaccagaaat	aaataaggat	ggtgatagag	aggttgaaga	agaaatgaag	1260
aagcatgaaa	gtaataatgt	gggattacta	gaaaacctga	ctaatgggtg	caatgctggc	1320
aatgggtgata	atggattaat	tcctcaaagg	aagagcagaa	cacctgaaaa	tcagcaatct	1380
cctgacaacg	aaagtgaaga	gtatcacaga	atttgcgat	tagtttctga	ctacaagaa	1440
aaacagatgc	caaaatactc	ttctgaaaac	agcaaccag	aacaagactt	aaagctgaca	1500
tcagaggaag	agtcacaaag	gcttgagggc	agtgaatg	gccagccaga	gaaaagatct	1560
caagaaccag	aaataaataa	ggatgggtgat	agagagctag	aaaattttat	ggctatcgaa	1620
gaaatgaaga	agcacggaag	tactcatgct	ggattcccag	aaaacctgac	taatggtgcc	1680
actgctggca	atgggtgatga	tggattaatt	cctccaagga	agagcagaac	acctgaaagc	1740
cagcaatttc	ctgacactga	gaatgaagag	tatcacagt	acgaacaaaa	tgatactcag	1800
aagcaatttt	gtgaagaaca	gaacactgga	atattacacg	atgagattct	gattcatgaa	1860
gaaaagcaga	tagaagtgg	tgaaaaaatg	aattctgagc	tttctcttag	ttgtaagaaa	1920
gaaaaagaca	tcttgcatga	aaatagtacg	ttgcgggaag	aaattgccat	gctaagactg	1980
gagctagaca	caatgaaaca	tcagagccag	ctaaaaaaa	aaaaaaaaa	aaaaaaaaa	2040

<210> 376

<211> 329

<212> PRT

<213> Homo sapien

<400> 376

Met	Asp	Ile	Val	Ser	Gly	Ser	His	Pro	Leu	Trp	Val	Asp	Ser	Phe
1			5					10					15	
Leu	His	Leu	Ala	Gly	Ser	Asp	Leu	Leu	Ser	Arg	Ser	Leu	Met	Ala
			20					25					30	
Glu	Tyr	Thr	Ile	Val	His	Ala	Ser	Phe	Ile	Ser	Cys	Ile	Ser	Ser
			35					40					45	
Leu	Asp	Gly	Gln	Gly	Glu	Arg	Gln	Glu	Gln	Arg	Gly	His	Phe	Trp
			50					55					60	

Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
 65 70 75 80
 Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
 85 90 95
 Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
 100 105 110
 His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
 115 120 125
 Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
 130 135 140
 Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
 145 150 155 160
 Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
 165 170 175
 Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
 180 185 190
 Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
 195 200 205
 Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
 210 215 220
 Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
 225 230 235 240
 Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
 245 250 255
 Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
 260 265 270
 Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
 275 280 285
 Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu
 290 295 300
 Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu
 305 310 315 320
 Ser Met Leu Phe Leu Val Ile Ile Met
 325

<210> 377

<211> 148

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(148)

<223> Xaa = Any Amino Acid

<400> 377

Met Thr Xaa Pro Ser Trp Ser Pro Gly Thr Thr Ser Val Glu Lys Ile
 1 5 10 15
 Trp Thr Ser Ser Thr Glu Leu Pro Trp Trp Gly Lys Val Pro Arg Lys
 20 25 30
 Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys
 35 40 45
 Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
 50 55 60
 Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
 65 70 75 80
 Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
 85 90 95

Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
 100 105 110
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
 115 120 125
 Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser
 130 135 140
 Lys Asn Lys Val
 145

<210> 378
 <211> 1719
 <212> PRT
 <213> Homo sapien

<400> 378
 Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His Val

340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Asn Val Ser Arg Thr Arg Asn Lys
 370 375 380
 Pro Arg Thr His Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser
 385 390 395 400
 Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys
 405 410 415
 Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly
 420 425 430
 Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys
 435 440 445
 Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly
 450 455 460
 Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys
 465 470 475 480
 Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys
 485 490 495
 Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp
 500 505 510
 Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu
 515 520 525
 Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
 530 535 540
 Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
 545 550 555 560
 Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
 565 570 575
 Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
 580 585 590
 Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
 595 600 605
 Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
 610 615 620
 Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
 625 630 635 640
 Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
 645 650 655
 Asn Lys His Gly Leu Thr Pro Leu Leu Gly Val His Glu Gln Lys
 660 665 670
 Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
 675 680 685
 Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
 690 695 700
 Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser
 705 710 715 720
 Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
 725 730 735
 His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
 740 745 750
 Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys
 755 760 765
 Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
 770 775 780
 Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
 785 790 795 800
 Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly

805 810 815
 Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn
 820 825 830
 Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe
 835 840 845
 Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser
 850 855 860
 Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn
 865 870 875 880
 Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Ser Gln Arg Leu
 885 890 895
 Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile
 900 905 910
 Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn
 915 920 925
 Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro
 930 935 940
 Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu
 945 950 955 960
 Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe
 965 970 975
 Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His
 980 985 990
 Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser
 995 1000 1005
 Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu
 1010 1015 1020
 Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His
 1025 1030 1035 1040
 Gln Ser Gln Leu Pro Arg Thr His Met Val Val Glu Val Asp Ser Met
 1045 1050 1055
 Pro Ala Ala Ser Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met
 1060 1065 1070
 Gly Lys Trp Cys Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys
 1075 1080 1085
 Ser Asn Val Gly Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr
 1090 1095 1100
 Leu Arg Ser Lys Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys
 1105 1110 1115 1120
 Arg Gly Ser Gly Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp
 1125 1130 1135
 Ser Ala Met Lys Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His
 1140 1145 1150
 Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp
 1155 1160 1165
 Gly Asp Tyr Asp Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg
 1170 1175 1180
 Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val
 1185 1190 1195 1200
 Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys
 1205 1210 1215
 Lys Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly
 1220 1225 1230
 Asn Ser Glu Val Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn
 1235 1240 1245
 Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys
 1250 1255 1260
 Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro

1265 1270 1275 1280
 Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr
 1285 1290 1295
 Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp
 1300 1305 1310
 Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val
 1315 1320 1325
 His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala
 1330 1335 1340
 Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala
 1345 1350 1355 1360
 Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn
 1365 1370 1375
 Ile Asp Val Ser Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr
 1380 1385 1390
 Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr
 1395 1400 1405
 Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 1440
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 1520
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 1600
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 1680
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379
 <211> 656
 <212> PRT
 <213> Homo sapien

<400> 379:

Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys	1	5	10	15
Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe	20	25	30	
Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp	35	40	45	
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	50	55	60	
Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val	65	70	75	80
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn	85	90	95	
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	100	105	110	
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe	115	120	125	
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	130	135	140	
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met	145	150	155	160
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala	165	170	175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu	180	185	190	
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr	195	200	205	
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met	210	215	220	
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn	225	230	235	240
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys	245	250	255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly	260	265	270	
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val	275	280	285	
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr	290	295	300	
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile	305	310	315	320
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu	325	330	335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val	340	345	350	
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile	355	360	365	
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu	370	375	380	
Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser	Gln	Pro	Glu	Lys	385	390	395	400
Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp	Arg	Glu	Val	Glu	405	410	415	

Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys
 515 520 525
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly
 530 535 540
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser
 545 550 555 560
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr
 565 570 575
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln
 580 585 590
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln
 595 600 605
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys
 610 615 620
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile
 625 630 635 640
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 645 650 655

<210> 380

<211> 671

<212> PRT

<213> Homo sapien

<400> 380

Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala

165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Lys Arg Ser Gln Glu Pro Glu Ile Asn Lys Asp
 515 520 525
 Gly Asp Arg Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys Lys
 530 535 540
 His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly Ala
 545 550 555 560
 Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser Arg
 565 570 575
 Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr His
 580 585 590
 Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln Asn
 595 600 605
 Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln Ile
 610 615 620
 Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys Lys

625 630 635 640
 Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile Ala
 645 650 655
 Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 660 665 670

<210> 381
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 381
 ggagaagcgt ctgctggggc aggaaggggt ttcctgccc tctcacctgt cctcaccaa 60
 ggtaacatgc ttccctaag ggtatccaa cccaggggcc tcaccatgac ctctgagggg 120
 ccaatatccc aggagaagca ttggggagtt gggggcagggt gaaggaccca ggactcacac 180
 atcctggggc tccaaggcag aggagaggggt cctcaagaag gtcaggagga aaatccgtaa 240
 caagcagtca g 251

<210> 382
 <211> 3279
 <212> DNA
 <213> Homo sapiens

<400> 382
 ctctctgcag ccccatgct ggtgaggggc acgggcagga acagtggacc caacatggaa 60
 atgctggagg gtgtcaggaa gtgatcgggc tctggggcag ggaggagggg tggggagtgt 120
 cactgggagg ggacatcctg cagaaggtag gagtgcagaa acaccgcctg caggggaggg 180
 gagagccctg cggcacctgg gggagcagag ggagcagcac ctgccaggc ctgggaggag 240
 gggcctggag ggcgtgagga ggagcagggg ggctgcattg ctggagttag ggatcagggg 300
 cagggcgcgga gatggcctca cacaggggaag agagggcccc tctgcaggg cctcacctgg 360
 gccacaggag gacactgctt ttctctgag gagtgcaggag ctgtggatgg tgctggacag 420
 aagaaggaca gggcctggct cagggtgtcca gaggctgtcg ctggcttccc ttggggatca 480
 gactgcaggg agggagggcg gcagggttgt ggggggagtg acgatgagga tgacctgggg 540
 gtggctccag gccttggccc tgcttgggccc ctcccccagc ctccctcaca gtctctggc 600
 cctcagtctc tcccctccac tccatcctcc atctggcctc agtgggtcat tctgatcact 660
 gaactgacca taccagccc tgcccacggc cctccatggc tcccacatgc cctggagagg 720
 ggacatctag tcagagagta gtctgaaga ggtggcctct gcgatgtgcc tgtgggggca 780
 gcacctctga gatgggtccc gccctcatcc tgctgacctg tctgcaggga ctgtcctcct 840
 ggaccttgcc ccttgtgcag gacttgagcc ctgaagtcct ctcccatag gccaaactg 900
 gagccttgtt cctctgtgtg gactccttgc ccatattctt gtgggagtgg gttctggaga 960
 catttctgtc tgttctgag agctgggaat tgctctcagt catctgcctg cgcggttctg 1020
 agagatggag ttgcctaggc agttattggg gccaatcttt ctactgtgt ctctcctcct 1080
 ttacccttag ggtgattctg ggggtccact tgtctgtaat ggtgtgcttc aaggatcac 1140
 atcatggggc cctgagccat gtgcccctgc tgaagaagcct gctgtgtaca ccaaggtgg 1200
 gcattaccgg aagtggatca aggacacat cgcagccaac cctgagtgcc cctgtccca 1260
 ccctacctc tagtaaatat aagtcacact cacgttctgg catcacttgg ccttctctga 1320
 tgctggacac ctgaagcttg gaactcacct ggccgaagct cgagcctcct gactcctact 1380
 gacctgtgct ttctggtgtg gactccaggg ctgctaggaa aaggaatggg cagacacagg 1440
 tgtatgccaa tgttctgaa atgggtataa ttctgtcctc tcttctggaa cactggctgt 1500
 ctctgaagac ttctcgtcga gtttcagtga ggacacacac aaagacgtgg gtgacctgt 1560
 tgtttgtggg gtgcagagat gggaggggtg gggcccaccc tggagagtg gacagtga 1620
 caaggtggac actctctaca gatcactgag gataagctgg agccacaatg catgaggcac 1680
 acacacagca aggttgacgc tgtaaacata gccacgctg tcttgggggc actgggaagc 1740
 ctagataagg ccgtgagcag aaagaagggg aggatcctcc tatgttgttg aaggagggac 1800
 tagggggaga aactgaaagc tgattaatta caggaggttt gttcaggtcc cccaaaccac 1860
 cgtcagattt gatgatttcc tagcaggact tacagaaata aagagctatc atgtgtgtgt 1920
 ttattatggt ttgttacatt gataggatac atactgaaat cagcaaacaa aacagatgta 1980
 tagattagag tgtggagaaa acagaggaaa acttgcagtt acgaagactg gcaacttggc 2040

```

tttactaagt tttcagactg gcaggaagtc aaacctatta ggctgaggac cttgtggagt 2100
gtagctgatac cagctgatag aggaactagc caggtggggg cctttccctt tggatggggg 2160
gcatatccga cagttattct ctccaagtgg agacttacgg acagcatata attctccctg 2220
caaggatgta tgataatatg taaaaagtaa ttccaactga ggaagctcac ctgatoctta 2280
gtgtccaggg tttttactgg gggctctgtg gacgagtatg gactacttga ataattgacc 2340
tgaagtcctc agacctgagg ttcccttagag ttcaaacaga tacagcatgg tccagagtcc 2400
cagatgtaca aaaacagggg ttcacacaaa atccccatctt tagcatgaag ggtctggcat 2460
ggcccaaggc cccaagtata tcaaggcact tgggcagaac atgccaagga atcaaatgtc 2520
atctcccagg agttattcaa gggtgagccc tttacttggg atgtacaggc tttgagcagt 2580
gcagggtcgc tgagtcacac ttttattgta caggggatga gggaaagggg gaggatgagg 2640
aagccccctt ggggatttgg tttgtcttgg tgatcagggt gtctatgggg ctatccctac 2700
aaagaagaat ccagaaatag gggcacattg aggaatgata ctgagcccaa agagcattca 2760
atcattgttt tatttgcctt cttttcacac cattgggtgag ggagggatta ccaccctggg 2820
gttatgaaga tggttgaaca cccacacatc agcaccggag atatgagatc aacagtttct 2880
tagcataga gattcacagc ccagagcagg aggacgctgc acaccatgca ggatgacatg 2940
ggggatgcgc tcgggattgg tgtgaagaag caaggactgt tagaggcagg ctttatagta 3000
acaagacggt ggggcaaact ctgatttccg tgggggaatg tcatggctct gctttactaa 3060
gttttgagac tggcaggtag tgaaactcat taggctgaga acctgtgga atgcagctga 3120
cccagctgat agaggaagta gccagggtgg agcctttccc agtgggtgtg ggacatatct 3180
ggcaagattt tgtggcactc ctggttacag atactggggc agcaataaaa actgaatctt 3240
gttttcagac cttaaaaaaa aaaaaaaaaa aaaagttttt 3279

```

<210> 383

<211> 154

<212> PRT

<213> Homo sapiens

<400> 383

Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
5 10 15

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
20 25 30

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
35 40 45

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
50 55 60

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
65 70 75 80

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
85 90 95

Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
100 105 110

Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
115 120 125

Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
130 135 140

Ala Leu Glu Arg Gly His Leu Val Arg Glu
145 150

<210> 384
<211> 557
<212> DNA
<213> Homo sapiens

<400> 384
ggatcctcta gagcgccgc ctactactac taaattcgcg gccgcgtcga cgaagaagag 60
aaagatgtgt tttgttttg actctctgtg gtcccttcca atgctgtggg tttccaacca 120
ggggaagggt cccttttgca ttgccaagt ccataacccat gagcactact ctaccatggt 180
tctgcctcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240
acttaacctt gaaatggaaa gtcttgcaat cccatttgca ggatccgtct gtgcacatgc 300
ctctgtagag agcagcattc ccagggacct tggaaacagt tggcactgta aggtgcttgc 360
tccccagac acatcctaaa aggtgttgta atggtgaaaa cgtcttcctt ctttattgcc 420
ccttcttatt tatgtgaaca actgtttgtc tttttttgta tcttttttaa actgtaaagt 480
tcaattgtga aaatgaatat catgcaaata aattatgcga ttttttttcc aaagtaaaaa 540
aaaaaaaaa aaaaaaa 557

<210> 385
<211> 337
<212> DNA
<213> Homo sapiens

<400> 385
ttcccagggt atgtgcgagg gaagacacat ttactatcct tgatggggct gattccttta 60
gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120
tctcaaagcc atctgctgtc ttcgagtacg gacacatcat cactcctgca ttgttgatca 180
aaacgtggag gtgcttttcc tcagctaaga agcccttagc aaaagctcga atagacttag 240
tatcagacag gtccagtttc cgcaccaaca cctgctggtt ccctgtcgtg gtctggatct 300
ctttggccac caattcccc ttttccacat ccgggca 337

<210> 386
<211> 300
<212> DNA
<213> Homo sapiens

<400> 386
gggcccgccta cgggcccagg ccccgccctcg cgagtcctcc tccccgggtg cctgcccgcga 60
gcccgcctcgg ccagaggggt gggcgcgggg ctgcctctac cggctggcgg ctgtaactca 120
gcgaccttgg cccgaaggct cttagcaagga ccaccgcacc ccagccgagg cggcgggcggc 180
gcggactttg ccgggtgtgt ggggcggagc ggactgcgtg tccgcggacg ggcagcgaag 240
atgttagcct tcgctgccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
<211> 537
<212> DNA
<213> Homo sapiens

<400> 387
gggcccagtc gggcaccaag ggactctttg caggcttctt tcctcggatc atcaaggctg 60
ccccctcctg tgccatcatg atcagcacct atgagttcgg caaaagcttc ttccagaggc 120
tgaaccagga ccggtctctg ggcggctgaa aggggcaagg aggcaaggac ccgtctctc 180
ccacggatgg ggagagggca ggaggagacc cagccaagt ccttttcttc agcactgagg 240
gagggggctt gtttcccttc cctcccggcg acaagctcca gggcagggct gtccctctgg 300
gcggcccagc acttccctcag acacaattc ttctgtctgc tccagtcgtg gggatcatca 360
cttaccacc ccccaagttc aagaccaaat cttccagctg ccccttcgt gtttccctgt 420
gtttgctgta gctgggcatg tctccaggaa ccaagaagcc ctcagcctgg tgtagtctcc 480
ctgacccttg ttaattcctt aagtctaaag atgatgaact tcaaaaaaaaa aaaaaaa 537

<210> 388
<211> 520
<212> DNA
<213> Homo sapiens

<400> 388
aggataattt ttaaaccaat caaatgaaaa aaacaaacaa acaaaaaagg aaatgtcatg 60
tgaggttaaa ccagtttgca ttcccctaat gtggaaaaag taaggaggact actcagcact 120
gtttgaagat tgcctcttct acagcttctg agaattgtgt tatttcaact gccaaagtga 180
ggacccctc cccaacatgc ccagcccac ccctaagcat ggtcccttgt caccaggcaa 240
ccaggaaact gctacttggt gacctacca gagaccagga gggtttggtt agctcacagg 300
acttccccca cccagaaga ttagcatccc atactagact cataactcaac tcaactaggc 360
tcatactcaa ttgatgggta ttagacaatt ccatttcttt ctgggtatta taaacagaaa 420
atctttcctc ttctcattac cagtaaaggc tcttggtatc ttctgttggt aatgatttct 480
atgaacttgt cttattttta tgggtgggtt ttttctggt 520

<210> 389
<211> 365
<212> DNA
<213> Homo sapiens

<400> 389
cgttgcccc gtttgacaga aggaaaggcg gagcttattc aaagtctaga gggagtggag 60
gagttaaggc tggatttcag atctgcctgg ttccagccgc agtggtgccct ctgctcccc 120
aacgactttc caaataatct caccagcgcc ttccagctca ggcgtcctag aagcgtcttg 180
aagcctatgg ccagctgtct ttgtgttccc tctcaccgc ctgtcctcac agctgagact 240
cccaggaaac cttcagacta ccttctcttg ccttcagcaa ggggcgttgc ccacattctc 300
tgagggtcag tggaagaacc tagactccca ttgctagagg tagaaagggg aagggtgctg 360
gggag 365

<210> 390
<211> 221
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(221)
<223> n = A,T,C or G

<400> 390
tgcctctcca tcttggcccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
tacacggnnt ctcatgggtg tggacatct ctgcttgagg ttccaggaag gcctctggct 120
gctctangag tctgancnga nctgttggcc cantntgaca naaggaaagg cggagcttat 180
tcaaagtcta gaggagtggt aggagttaag gctggatttc a 221

<210> 391
<211> 325
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 391

tggagcaggt cccgaggcct ccctagagcc tggggccgac tctgtgncga tgcangcttt 60
ctctcgcgcc cagcctggag ctgctcctgg catctaccaa caatcagncg aggcgagcag 120
tagccagggc actgctgcca acagccagtc cnnataccat catgtnaccc ggtgngctct 180
naanttngat ntccanagcc ctacccatcn tagttctgct ctcccaccgg ntaccagccc 240
cactgcccag gaatcctaca gccagtaccc tgtcccagcg tctctaccta ccagtacgat 300
gagacctccg gctactacta tgacc 325

<210> 392

<211> 277

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(277)

<223> n = A,T,C or G

<400> 392

atattgttta actccttctt ttatatcttt taacattttc atgngaaag gttcacatct 60
agtctcactt nggcnagnn ctctacttg agtctcttcc ccggcctggn ccagtnгнаa 120
antaccanga accgncatgn cttaanaacn ncctggtttn tgggttnntc aatgactgca 180
tgagtgacac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtggcgcg 240
ctgaggatac agcgccgcgt cctgtgttgc tggggaa 277

<210> 393

<211> 566

<212> DNA

<213> Homo sapiens

<400> 393

actagtccag tgtggtggaa ttccgggccg cgtcgacgga caggtcagct gtctggctca 60
gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga ttaaatccag cctaaacgtt 120
ttgccgggaa cactgcagag acaatgctgt gagtttccaa ccttagccca tctgcgggca 180
gagaaggctct agtttgtcca tcagcattat catgatatca ggactgggta cttgggtaag 240
gaggggtcta ggagatctgt cccttttaga gacaccttac ttataatgaa gtatttggga 300
gggtggtttt caaaagtaga aatgtcctgt attccgatga tcatcctgta aacattttat 360
catttattaa tcatccctgc ctgtgtctat tattatattc atatctctac gctggaaact 420
ttctgectca atgtttactg tgcccttgggt tttgctagtt tgtgttggg aaaaaaaaaa 480
cattctctgc ctgagtttta atttttgtcc aaagttattt taatctatac aattaaagc 540
ttttgcctat caaaaaaaaa aaaaaa 566

<210> 394

<211> 384

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(384)

<223> n = A,T,C or G

<400> 394

gaacatacat gtcccggcac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60
tgcaaatng gaccgggcca aggctggact gctggagcgt gtgaaggagc tacaggccna 120
gcaggaggac cgggctttaa ggagttttaa gctgagtgtc actgtagacc ccaaatacca 180
tccaagatt atcgggagaa agggggcagt aattacccaa atccggttgg agcatgacgt 240
gaacatccag tttcctgata aggacgatgg gaaccagccc caggaccaa ttaccatcac 300
agggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360

tgagcagatg gtttctgagg acgt

384

<210> 395
 <211> 399
 <212> DNA
 <213> Homo sapiens

<400> 395
 ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgc 60
 tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
 tatcagaggt ttcattcattg cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
 attcagctct ttcagctacc ctgagttctc tatagagttg cctaaccacag gcagaattgg 240
 ccagctactt gtcgtgaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
 caagttctct ttggaaagcc tgggcatctc ctactacag acctctgacc atgggacggt 360
 gcagcctggt gagaccatcc aatcccaaat aaaatgcac 399

<210> 396
 <211> 403
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(403)
 <223> n = A,T,C or G

<400> 396
 tggagtntc agtgcaaca agccataaag cttcagtagc aaattactgt ctcacagaaa 60
 gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
 agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttagtagat 180
 actaaaaaaa gtggatgaat aatctggata tttttcctaa aaagattcct tgaaacacat 240
 taggaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
 gtttagggga gggagtggag gataaaagaa ggaaaaaag aagagtgaga aaacctattt 360
 atcaaagcag gtgctatcac tcaatgttag gccctgctct ttt 403

<210> 397
 <211> 100
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(100)
 <223> n = A,T,C or G

<400> 397
 actagtnacg tgtgggtggaa ttgcggccg cgtcgacctc naanccatct ctatagcaaa 60
 tccatccccg ctctgggttg gtnacagaat gactgacaaa 100

<210> 398
 <211> 278
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(278)
 <223> n = A,T,C or G

<400> 398
g c g g c c g c g t c g a c a g c a g t t c c g c c a g c g c t c g c c c c t g g g t g g g a t g t g c t g c a c g c 60
c c a c c t g g a c a t c t g g a a g t c a g c g g c c t g a t g a a a g a g c g g a c t t c a c c t g g g g c g a t 120
t c a c t a c t g t g c c t c g a c c a g t g a g g a g a g c t g g a c c g a c a g c g a g g t g g a c t c a t c a t g 180
c t c c g g g c a g c c c a t c c a c c t g t g g c a g t t c c t c a a g g a g t t g c t a c t c a a g c c c c a c a g 240
c t a t g g c c g c t t c a t t a n g t g g c t c a a c a a g g a a g g 278

<210> 399
<211> 298
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)... (298)
<223> n = A,T,C or G

<400> 399
a c g g a g g t g g a g g a a g c g n c c c t g g g a t c g a n a g g a t g g g t c c t g n c a t t g a c c n c c t c n 60
g g g g t g c c n g c a t g g a g c g c a t g g g c g g g c c t g g g c c a c g c a t g g a t c g c g t g g g c t 120
c c g a g a t c g a g c g c a t g g g c c t g g t c a t g g a c c g c a t g g g c t c c g t g g g a g c g c a t g g g c t 180
c c g g c a t t g a g c g c a t g g g c c g c t g g g c c t c g a c c a c a t g g c c t c c a n c a t t g a n c g c a 240
t g g g c c a g a c c a t g g a g c g c a t t g g c t c t g c g t g g a g c n c a t g g g t g c c g g c a t g g g 298

<210> 400
<211> 548
<212> DNA
<213> Homo sapiens

<400> 400
a c a t c a a c t a c t t c c t c a t t t t a a g g t a t g g c a g t t c c c t t c a t e c c c c t t t c c t g c c t t 60
g t a c a t g t a c a t g t a t g a a t t t c c t t c t c t t a c c g a a c t c t c t c c a c a c a t c a c a a g g t 120
c a a a g a a c c a c a c g t t a g a a g g t a a g a g g g a a g a g g c a c c c t a t g a a t g a a a t g g t g a t t t c t 180
t g a g t c t c t t t t t c c a c g t t t a a g g g g c c a t g g c a g g a c t t a g a g t t g c g a g t t a a g a c 240
t g c a g a g g g c t a g a g a a t t a t t c a t a c a g g c t t t g a g g c c a c c c a t g t c a c t t a t c c c g 300
t a t a c c c t c t c a c c a t c c c c t t g t c t a c t c t g a t g c c c c a a g a t g c a a c t g g g c a g c t a 360
g t t g g c c c c a t a a t t c t g g g c c t t t g t t g t t t g t t t a a t t a c t t g g g c a t c c c a g g a a g 420
c t t t c c a g t g a t c t c c t a c c a t g g g c c c c c c t c c t g g g a t c a a g c c c c t c c a g g c c c t g 480
t c c c c a g c c c c t c c t g c c c c a g c c c a c c c g c t t g c c t t g g t g c t c a g c c c t c c c a t t g g g 540
a g c a g g t t 548

<210> 401
<211> 355
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)... (355)
<223> n = A,T,C or G

<400> 401
a c t g t t t c c a t g t t a t g t t t c t a c a c a t t g c t a c c t c a g t g c t c c t g g a a a c t t a g c t t t 60
t g a t g t c t c c a a g t a g t c c a c c t t c a t t t a a c t c t t t g a a a c t g t a t c a t c t t t g c c a a g 120
t a a g a g t g g t g g c c t a t t t c a g c t g c t t t g a c a a a a a t g a c t g g c t c c t g a c t t a a c g t t c 180
t a t a a a t g a a t g t g c t g a a g c a a a g t g c c c a t g g t g g c g g c g a a g a a g a n a a a g a t g t g t 240
t t t g t t t t g g a c t c t c t g t g t g t c c c t t c c a a t g c t g n g g g t t t c c a a c c a g g g a a g g g t 300

cccttttgcg ttgccaagtg ccataacat gagcactact ctaccatggn tctgc 355

<210> 402
<211> 407
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G

<400> 402
atggggcaag ctggataaag aaccaagacc cactggagta tctgtcttc aagaaaccca 60
tctcacatgc ggtggcatac ataggctcaa aataaaggaa tggagaaaaa tatttcaagc 120
aaatggaaaa cagaaaaaag caggtgttgc actcctactt tctgacaaaa cagactatgc 180
gaataaagat aaaaaagaga aggacattac aaaggtgggc ctgacctttg ataaatctca 240
ttgcttgata ccaacctggg ctgttttaac tgcccaaac aaaggataa tttgctgagg 300
ttgtggagct tctccctgc agagagtccc tgatctccca aaatttggtt gagatgtaag 360
gntgattttg ctgacaactc cttttctgaa gttttactca ttccaa 407

<210> 403
<211> 303
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

<400> 403
cagtatttat agccnaactg aaaagctagt agcaggcaag tctcaaattc aggcaccaa 60
tcctaagcaa gagccatggc atggtgaaaa tgcaaaagga gagtctggcc aatctacaaa 120
tagagaacaa gacctactca gtcatgaaca aaaaggcaga caccaacatg gatctcatgg 180
gggattggat attgtaatta tagagcagga agatgacagt gatcgctatt tggcacaaca 240
tcttaacaac gaccgaaacc cattatttac ataaacctcc attcggtaac catgttgaaa 300
gga 303

<210> 404
<211> 225
<212> DNA
<213> Homo sapiens

<400> 404
aagtgtact tttaaaaatt tagtggattt tgaaaattct tagaggaaag taaaggaaaa 60
attgttaatg cactcattta cttttacatg gtgaaagttc tctcttgatc ctacaaacag 120
acattttcca ctggtgtttc catagttggt aagtgtatca gatgtgttgg gcatgtgaat 180
ctccaagtgc ctgtgtaata aataaagtat ctttatttca ttcat 225

<210> 405
<211> 334
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(334)

<223> n = A,T,C or G

<400> 405

```
gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgagggttg tctggaggac 60
ttcaatacac ctccccccat agtgaatcag ctccaggagg gtccagtcct tctccttact 120
tcatccccat cccatgccaa aggaagaccc tccctccttg gtcacagcc ttctctaggg 180
ttccagtgct ctccaggaca gagtgggtta tggtttcagc tccatccttg ctgtgagtgt 240
ctggtgcggt tgtgcctcca gcttctgctc agtgcttcat ggacagtgtc cagcccatgt 300
cactctccac tctctcanng tggatccccc cctt                                     334
```

<210> 406

<211> 216

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(216)

<223> n = A,T,C or G

<400> 406

```
tttcatacct aatgaggagg ttganatnac atnnaaccag gaaatgcatg gatctcaang 60
gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcaattgct 120
acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180
actgccaaag aatnttcaag aaggaggact gccant                                     216
```

<210> 407

<211> 413

<212> DNA

<213> Homo sapiens

<400> 407

```
gctgacttgc tagtatcatc tgcattcatt gaagcacaag aacttcatgc cttgactcat 60
gtaaatgcaa taggattaaa aaataaattt gatattcacat ggaaacagac aaaaaatatt 120
gtacaacatt gcacccagtg tcagattcta cacctggcca ctgaggaagc aagagttaatt 180
cccagagggtc tatgtcctaa tgtgttatgg caaatggatg tcatgcacgt accttcattt 240
ggaaaattgt catttgtcca tgtgacagtt gatacttatt cacatttcat atgggcaacc 300
tgccagacag gagaaagtct tcccatgtta aaagacattt attatcttgt tttcctgtca 360
tggggagtcc agaaaaagtt aaaacagaca atgggccagg ttctgtagta aag                                     413
```

<210> 408

<211> 183

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(183)

<223> n = A,T,C or G

<400> 408

```
ggagctngcc ctcaattcct ccatntctat gttancatat ttaatgtctt ttgnnattaa 60
tncttaacta gttaatcctt aaagggctan ntaatcctta actagtcctt ccattgtgag 120
cattatcctt ccagtattcn ccttctnttt tatttactcc ttcttggtta cccatgtact 180
ntt                                     183
```

<210> 409

<211> 250

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(250)
<223> n = A,T,C or G

<400> 409
cccacgcatg ataagctctt tatttctgta agtcctgcta ggaaatcatc aaatctgacg 60
gtgggtttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccta 120
gtccctcctt caacaacata ggaggatcct ccccttcttt ctgctcacgg ccttatctag 180
gcttcccagt gccccagga cagcgtgggc tatgtttaca gcgctcctt gctggggggg 240
ggcctatgc 250

<210> 410
<211> 306
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

<400> 410
ggctggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
agtcttgcaa tccatttgc aggatccgtc tgtgcacatg cctctgtaga gagcagcatt 120
cccaggggacc ttggaaacag ttggcactgt aagggtgctt ctccccaaaga cacatcctaa 180
aagggtgttg aatggtgaaa accgcttcct tctttattgc cctttcttat ttatgtgaac 240
nactggttgg ctttttttgn atctttttta aactggaaag ttcaattng aaatgaata 300
tcntgc 306

<210> 411
<211> 261
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 411
agagatattn cttaggtnaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaagtgc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggngaggcaa a 261

<210> 412
<211> 241
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(241)

<223> n = A,T,C or G

<400> 412

```
gttcaatggt acctgacatt tctacaacac cccactcacc gatgtattcg ttgcccagtg 60
ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgcccagg aaatactacg 120
actgactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
ctgggagatt tctctgggta cattgaattc ccaaactacc cangcaatta cccagccaac 240
a                                                                 241
```

<210> 413

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(231)

<223> n = A,T,C or G

<400> 413

```
aactcttaca atccaagtga ctcatctgtg tgcttgaatc ctttcactg tctcatctcc 60
ctcatccaag tttctagtac cttctctttg ttgtgaagga taatcaaact gaacaacaaa 120
aagtttactc tctctatttg gaacctaaaa actctcttct tcttgggtct gagggctcca 180
agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t 231
```

<210> 414

<211> 234

<212> DNA

<213> Homo sapiens

<400> 414

```
actgtccatg aagcactgag cagaagctgg aggcacaacg caccagacac tcacagcaag 60
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaag gagggagggt cttccttttg catgggatgg ggaatgaagta aggagaggga 180
ctggaccccc tggaagctga ttcactatgg ggggagggtg attgaagtcc tcca 234
```

<210> 415

<211> 217

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(217)

<223> n = A,T,C or G

<400> 415

```
gcataggatt aagactgagt atcttttcta cattctttta actttctaag gggcatttct 60
caaaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cactttctca 120
cacctagcaa tagtagaatt cagtctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc 217
```

<210> 416

<211> 213

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(213)

<223> n = A,T,C or G

<400> 416

```
atgcataatnt aaagganact gcctcgcttt tagaagacat ctggncctgct ctctgcatga 60
ggcacagcag taaagctctt tgattcccag aatcaagaac tctccccttc agactattac 120
cgaatgcaag gtgggtaatt gaaggccact aattgatgct caaatagaag gatattgact 180
atattggaac agatggagtc tctactacaa aag                               213
```

<210> 417

<211> 303

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(303)

<223> n = A,T,C or G

<400> 417

```
nagtcttcag gccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60
gtgggaaagg ctttactctg agttcaaadc ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
ttcatctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt gggaagggct 240
tcantcaaag ttcgtatctt caaatccatc ngaaggncca cagtatanan aaacctttta 300
agt                               303
```

<210> 418

<211> 328

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(328)

<223> n = A,T,C or G

<400> 418

```
tttttggcgg tgggtgggca gggacgggac angagtctca ctctgttgcc caggctggag 60
tgcacaggca tgatctcggc tcaactacaac cctgcctcc catgtccaag cgattcttgt 120
gcctcagcct tccctgtagc tagaattaca ggcacatgcc accacacca gctagttttt 180
gtatttttag tagagacagg gtttcaccat gttggccagg ctggtctcaa actcctnacc 240
tcagnngtca ggctggtctc aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
aaagtgctan gattacaggc cgtgagcc                               328
```

<210> 419

<211> 389

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(389)

<223> n = A,T,C or G

<400> 419

```
cctcctcaag acggcctgtg gtccgcctcc cggcaaccaa gaagcctgca gtgccatag 60
```

acccttgagc catggactgg agcctgaaag gcagcgtaca ccctgctcct gatcttgctg 120
cttgtttcct ctctgtggct ccattcatag cacagtgtt gcactgaggc ttgtgcaggc 180
cgagcaaggc caagctggct caaagagcaa ccagtcaact ctgccacggt gtgccaggca 240
ccggttctcc agccaccaac ctcaactcgt ccgcgaaatg gcacatcagt tcttctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
tggcagccac tcnggctgtg tcgacgcgg 389

<210> 420

<211> 408

<212> DNA

<213> Homo sapiens

<400> 420

gttcctccta actcctgcc aaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tctgttttct gcttttttct tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgt gtttcggcat ggagaccgaa 180
gtccattga cacttttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgtatg acaaacctgg caagcccg 408

<210> 421

<211> 352

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (352)

<223> n = A,T,C or G

<400> 421

gctcaaaaat ctttttactg atnggcattg ctacacaatc attgactatt acggaggcca 60
gaggagaatg aggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120
ttcactgaca gaacaggtct tttttgggtc cttcttctcc accacnatat acttgagtc 180
ctccttcttg aagattcttt ggcagttgtc tttgtcataa cccacaggtg tagaaacaag 240
ggtgcaacat gaaatttctg tttcgtagca agtgcattgc tcacaagttg gcangtctgc 300
cactccgagt ttattgggtg tttgtttcct ttgagatcca tgcatctcct gg 352

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

atgccaccat gctggcaatg cagcgggcgg tcgaaggcct gcatatccag cccaagctgg 60
cgatgatcga cggcaaccgt tgcccgaagt tgccgatgcc agccgaagcg gtggtcaagg 120
gcgatagcaa ggtgccggcg atcgcgcgcg cgtcaatcct ggccaaggtc agccgtgac 180
gtgaaatggc agctgtcgaa ttgatctacc cgggttatgg catcggcggg cataagggct 240
atccgacacc ggtgcacctg gaagccttgc agcggctggg gccgacggcg attcaccgac 300
gcttcttccg ccggtacggc tggcctatga aaattat 337

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(310)
<223> n = A,T,C or G

<400> 423
gctcaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60
aggagaatga ggctggcctt gggagccctg tgctactan aagcncatta gattatccat 120
tcactgacag aacaggctctt ttttgggtcc ttcttctcca ccacgatata cttgcagtcc 180
tccttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
gtgcaacatg aaatttctgt ttcgtagcaa gtgcatgtct cacagttgtc aagtctgccc 300
tccgagttta 310

<210> 424
<211> 370
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(370)
<223> n = A,T,C or G

<400> 424
gctcaaaaat ctttttactg ataggcatgg ctacacaatc attgactatt agaggccaga 60
ggagaatgag gcctggcctg ggagccctgt gctactaga agcacattag attatccatt 120
cactgacaga acaggctctt tttgggtcct tcttctccac cacgatatac ttgcagtcct 180
ccttcttgaa gattctttgg cagttgtctt tgtcataacc cacaggtgta gaaacatcct 240
ggttgaatct cctggaactc cctcattagg tatgaaatag catgatgcat tgcataaagt 300
cacgaaggtg gcaaagatca caacgctgcc cagganaaca ttcattgtga taagcaggac 360
tccgtcgacg 370

<210> 425
<211> 216
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 425
aattgctatn nttttatttg ccaactcaaaa taattaccaa aaaaaaaaaa tnttaaataga 60
taacaacnca acatcaaggc aaananaaca ggaatggntg actntgcata aatnggccga 120
anattatcca ttatnttaag ggttgacttc aggnatagc acacagacaa acatgcccag 180
gaggnntnca ggaccgctcg atgtntnttg aggagg 216

<210> 426
<211> 596
<212> DNA
<213> Homo sapiens

<400> 426
cttccagtga ggataaccct gttgccccgg gccgagggtc tccattaggc tctgattgat 60
tggcagtcag tgatggaagg gtgttctgat cattccgact gccccagggt tcgctggcca 120
gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatgggtga 180
gctgtccttg tattttgatt aacctaattg ccttcccagc acgactcgga ttcagctgga 240
gacatcacgg caacttttaa tgaatgatt tgaagggcca ttaagaggca cttcccgtta 300

```

ttaggcagtt catctgcact gataacttct tggcagctga gctggtcgga gctgtggccc 360
aaacgcacac ttggcttttg gttttgagat acaactctta atcttttagt catgcttgag 420
ggtggatggc cttttcagct ttaacccaat ttgcactgcc ttggaagtgt agccaggaga 480
atacactcat atactcgtgg gcttagaggc cacagcagat gtcattggtc tactgcctga 540
gtcccgtggt tcccatccca ggaccttcca tcggcgagta cctgggagcc cgtgct 596

```

<210> 427

<211> 107

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(107)

<223> n = A,T,C or G

<400> 427

```

gaagaattca agttaggttt attcaaaggg cttacngaga atcctanacc caggncaccag 60
cccgggagca gccttanaga gctcctgttt gactgcccgg ctcagng 107

```

<210> 428

<211> 38

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(38)

<223> n = A,T,C or G

<400> 428

```

gaacttcena anaangactt tattcactat ttacatt 38

```

<210> 429

<211> 544

<212> DNA

<213> Homo sapiens

<400> 429

```

ctttgctgga cggaataaaa gtggacgcaa gcatgacctc ctgatgaggg cgctgcattt 60
attgaagagc ggctgcagcc ctgcggttca gattaaaatc cgagaattgt atagacgccg 120
atatccacga actcttgaag gactttctga tttatccaca atcaaatac cggttttcag 180
tttggatggt ggctcatcac ctgtagaacc tgacttggcc gtggctggaa tccactcgtt 240
gccttcact tcagttacac ctcaactcacc atcctctcct gttggttctg tgetgcttca 300
agatactaag cccacatttg agatgcagca gccatctccc ccaattcctc ctgtccatcc 360
tgatgtgcag ttaaaaaatc tgccctttta tgatgtcctt gatgttctca tcaagcccac 420
gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttattt ttgctttgac 480
acctcaacaa gttagagaga tatgcatatc cagggatttt ttgccagggtg gtaggagaga 540
ttat 544

```

<210> 430

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(507)

<223> n = A,T,C or G

<400> 430

```

cttatcncaa tggggctccc aaacttggtc gtgcagtggg aactccgggg gaattttgaa 60
gaacactgac acccatcttc caccctcgaca ctctgattta attgggctgc agtgagaaca 120
gagcatcaat ttaaaaagct gcccgagaatg ttntcctggg cagcgttggt atctttgcn 180
ccttcgtgac tttatgcaat gcatcatgct atttcatacc taatgaggga gttccaggag 240
attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300
caagaaggag gactgcaagt atatcgtggt ggagaagaag gacccaaaaa agacctgttc 360
tgtcagttaa tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggcct 420
cattctcttc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480
ttttgagcaa aaaaaaaaaa aaaaaaa 507

```

<210> 431

<211> 392

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 431

```

gaaaattcag aatggataaa aacaaatgaa gtacaaaata ttccagattt acatagcgat 60
aaacaagaaa gcacttatca ggaggactta caaatggaag tacactctan aaccatcatc 120
tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
aagagatggg aaacaaaatc ccaggagttt tgtgtgtgga gtccctgggt ttccaacaga 240
catcattcca gcattctgag attagggnga ttggggatca ttctggagtt ggaatgttca 300
acaaaagtga tgttgtagg taaaatgtac aactcttgga tctatgcaga cattgaaggt 360
gcaatgagtc tggcttttac tctgctgttt ct 392

```

<210> 432

<211> 387

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(387)

<223> n = A,T,C or G

<400> 432

```

ggtatccnta cataatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60
aatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120
ngtagtccaa gctctcgna gtccagccac tngaaacat gctcccttta gattaacctc 180
gtggacnctn ttgttgnatt gtctgaactg tagngccctg tattttgctt ctgtctgnga 240
attctgttgc ttctggggca ttctcttgng atgcagagga ccaccacaca gatgacagca 300
atctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgta aggaccggga 360
acaacgtata gaacactgga gtctctt 387

```

<210> 433

<211> 281

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(281)

<223> n = A,T,C or G

<400> 433

```
ttcaactagc anagaanact gcttcagggg gtgtaaaatg aaaggcttcc acgcagttat 60
ctgattaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacactatag 120
caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
atcgccgtgg ctattcctcn ttgntattac accagnagg ntctctgtnt gccactggg 240
tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281
```

<210> 434

<211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```
ttttaaaata agcatttagt gctcagtcct tactgagtag tctttctctc cctcctctctg 60
aatttaattc tttcaacttg caatttgcaa ggattacaca tttcactgtg atgtatattg 120
tggtgcaaaa aaaaaaaagt gtctttgttt aaaattactt ggtttgtaga tccatcttgc 180
ttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa acatctgaag 240
agctagtcta tcagcatctg acagggtgaat tggatgggtc tcagaaccat ttcaccaga 300
cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca taacaaaccc 360
tgctccaatc tgcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420
tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag tacccatgtc 480
ttaa 484
```

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```
gcgcccgtca gaggaggtca ctttctgcct tccacgtcct ctttcaagga agccccatgt 60
gggtagcttt caatatcgca ggttcttact cctctgcctc tataagctca aaccaccaa 120
cgatcgggca agtaaacccc ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180
atgggcctgt ggggaggggg caagatagat gagggggagc ggcaggtgac ggggtgaccc 240
cttgagaga ggaaaaaggc cacaagaggg gctgccaccg ccactaacgg agatggccct 300
ggtagagacc tttgggggtc tggaaacctct ggactcccca tgctctaact cccacactct 360
gctatcagaa acttaaactt gaggattttc tctgtttttc actcgcaata aattcagagc 420
aaac 424
```

<210> 436

<211> 667

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(667)

<223> n = A,T,C or G

<400> 436

```
accttgggaa nactctcaca atataaaggg tcgtagactt tactccaaat tccaaaaagg 60
tcttggccat gtaatcctga aagttttccc aaggtagcta taaaatcctt ataaggggtc 120
agcctcttct ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaacgaggg 180
cagttctctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
atgggctgcc agagtaggat aggattccag atgctgacac cttctggggg aaacagggct 300
gccaggtttg tcatagcact catcaaagtc cgggtcaactg ctgtgcttcg aatataaacc 360
```

tggtcatgtt tataggactc attcaagaat tttctatata tctttcttat atactctcca 420
agttcataat gctgctccat gccagctgg gtgagttggc caaatccttg tggccatgag 480
gattccttta tggggtcagt gggaaagggt tcaatgggac ttcggtctcc atgccgaaac 540
accaaagtca caaacttcaa ctccttggtc agtacacttc ggtctagcca gaaaaaaagc 600
agaaacaaga agccaaggct aaggcttgct gccttgccag gaggaggggt gcagctctca 660
tggtgag 667

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

ctacgtctca accctcattt ttaggtaagg aatcttaagt ccaaagatat taagtgactc 60
acacagccag gtaaggaaag ctggattggc aactaggac tctaccatac cgggttttgt 120
taaagctcag gttaggaggc tgataagctt ggaaggaaat tcagacagct ttttcagatc 180
ataaaagata attcttagcc catgttcttc tccagagcag acctgaaatg acagcacagc 240
aggtactcct ctattttcac ccctcttgct tctactctct ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatgtt tgtacagatc atggactatt ctctgtggac 360
catttctcca ggttacccta ggtgtcacta ttggggggag agccagcacc ttttagctttc 420
atttgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480
acacctaact gctgttgctc ctgaggtggg gaaagacaga tatagagctt acagtattta 540
tcctatttct aggcactgag ggctgtgggg taccttgtgg tgccaaaaca gatcctgttt 600
taaggacatg ttgtctcaga gatgtctgta actatctggg ggctctgttg gctctttacc 660
ctgcatcatg tgctctcttg gctgaaaatg acc 693

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

ctgcttatca caatgaatgt tctcctgggc agcgttgtga tctttgccac ctctgtgact 60
ttatgcaatg catcatgcta tttcatacct aatgaggagg ttccaggaga ttcaaccagg 120
atgtttctac acctgtgggt tatgacaaag acaactgcc aagaatcttc aagaaggagg 180
actgcaagta tatctgttg agaagaagga ccaaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgcttcta gtaggcacag ggctcccagg ccaggcctca ttctcctctg 300
gcctctaata gtcaataatt gtgtagccat gcctatcagt aaaaagattt ttgagcaaac 360

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (431)

<223> n = A,T,C or G

<400> 439

gttctnnta actcctgcc aaaaacagctc tctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggtc tcttgtttct gcttttttct tggctagacc 120
gaagtgtact agccaaggag ttgaagtgtg tgactttggt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcgccgcgc 420
aathtagtag t 431

<210> 440
<211> 523
<212> DNA
<213> Homo sapiens

<400> 440
agagataaag cttagggtcaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaatgtc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaac tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac 360
taaaaattaa aacctctttg tgtcccttgg tcttggaaac tttatgttcc ttttaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaac acatatagca gctcttgaag 480
tatatatatc atagcaaata agtcatctga tgagaacaag cta 523

<210> 441
<211> 430
<212> DNA
<213> Homo sapiens

<400> 441
gttctctcta actcctgcc aaaacagctc tctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gcttttttcc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gtttcggcat ggagaccgaa 180
gtccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgctga cgcggccgcg 420
aatttagtag 430

<210> 442
<211> 362
<212> DNA
<213> Homo sapiens

<400> 442
ctaaggaatt agtagtggtc ccatcacttg tttggagtgt gctattctaa aagattttga 60
tttcttgga tgacaattat attttaactt tgggtgggga aagagttata ggaccacagt 120
cttcaacttc gatacttgta aattaatctt ttattgcact tgttttgacc attagctat 180
atgtttagaa atggtcattt tacggaaaaa ttagaaaaat tctgataata gtgcagaata 240
aatgaattaa tgttttactt aatttatatt gaactgtcaa tgacaaataa aaattctttt 300
tgattatatt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc 362

<210> 443
<211> 624
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(624)
<223> n = A,T,C or G

<400> 443
tttttttttt gcaacacaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60

```

ttgaaagaat taaattcaga ggaggggaga gaaagagtac tcagtaggga ctgagcacta 120
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180
tgctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
cccaaaccac agaaaatggg gtgaaattgg ccaactttct attaaacttg cttcctgttt 300
tataaaatat tgtgaataat atcacctact tcaaagggca gttatgagc ttaaataaac 360
taacgcctac aaaacactta aacatagata acatagggtc aagtactatg tatctggtac 420
atggtaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaata 480
agtacagaga gagggcactt aaaccaacta agggcctgga gggaagggtt cctggaaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactatgacc ttggccaaat tatttaaact 600
ttgtccctat ctgctaaaca gatc 624

```

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (425)

<223> n = A,T,C or G

<400> 444

```

gcacatcatt nntcttgcatt tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaacc aatgttttgc ttagaaatag aacaagtaag 120
ttcattgcta tagcataaca caaaatttgc ataagtgtg gtcagcaaat ccttgaatgc 180
tgcttaatgt gagagggttg taaaatcctt tgtgcaacac tctaactccc tgaatgttt 240
gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaaagag caaccagcca 300
cctctgcaat ctgccacctc ctgctggcag gatttgttt tgcatectgt gaagagccaa 360
ggaggcacca gggcataagt gagtagactt atggctcgac cggccgcgaa ttagtagta 420
gtaga 425

```

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (414)

<223> n = A,T,C or G

<400> 445

```

catgtttatg nttttggatt actttgggca cctagtgttt ctaaactcgc tatcattctt 60
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
tgaaattctt tgcatgtggc agattatttg atgtagtctt ctttaactag catataaatc 180
tggtgtgttt cagataaatg aacagcaaaa tgtggtggaa ttaccatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gattatgtaa caaataacta tttcctaacc attgatcttt 300
ggatttttat aatcctactc acaaatgact aggtctctcc tcttgatttt tgaagcagtg 360
tgggtgctgg attgataaaa aaaaaaaaag tcgacgcggc cgcaattta gtag 414

```

<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (631)

<223> n = A,T,C or G

<400> 446

```

acaaattaga anaaagtgc agagaacacc acataccttg tccggaacat tacaatggct 60
tctgcattga tgggaagtgt gagcattcta tcaatatgca ggagccatct tgcagggtgtg 120
atgctgggta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttggtc 180
ccggtcctgt acgatttcag tatgtcttaa tgcagctgt gattggaaca attcagattg 240
ctgtcatctg tgtggtggtc ctctgcatca caagggccaa actttaggta atagcattgg 300
actgagattt gtaaaacttc caaccttcca ggaaatgcc cagaagcaac agaattcaca 360
gacagaagca aaatacaggg cactacagtt cagacaatac aacaagagcg tccacgaggt 420
taatctaaag ggagcatggt tcacagtggc tggactaccg agagcttgga ctacacaata 480
cagtattata gacaaaagaa taagacaaga gatctacaca tgtgccttg catttggtgtg 540
aatctacacc aatgaaaaca tgtactacag ctatatttga ttatgtatgg atatatttga 600
aatagtatac attgtcttga tgtttttct g

```

631

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(585)

<223> n = A,T,C or G

<400> 447

```

ccttgggaaa antntcacaa tataaagggt cgtagacttt actccaaatt ccaaaaagggt 60
cctggccatg taatcctgaa agttttccca aggtagctat aaaatcctta taagggtgca 120
gcctcttctg gaattcctct gatttcaaag tctcactctc aagttcttga aaacgagggc 180
agttcctgaa aggcaggtat agcaactgat ctccagaaag aggaactgtg tgcaccggga 240
tggtgtgcca gagtaggata ggattccaga tgctgacacc ttctggggga aacagggctg 300
ccaggtttgt catagactc atcaaagtcc ggtcaacgtc tgtgcttcga atataaacct 360
gttcattgtt ataggactca ttcaagaatt tctatatct ctttcttata tactctccaa 420
gttcataatg ctgctccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480
attcctttat ggggtcagtg ggaaagggtg caatgggact tcggtctcca tgccgaaaca 540
ccaaagtcac aaacttcaac tccttggtga gtacacttcg gtcta

```

585

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(93)

<223> n = A,T,C or G

<400> 448

```

tgctcgtggg tcattctgan nnccgaaactg acntgcccag cctgcccgan gggccnccat 60
ggctccctag tgccctggag agganggggc tag

```

93

<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (706)

<223> n = A,T,C or G

<400> 449

```
ccaagtcat gctntgtgct ggacgctgga cagggggcaa aagcnnttgc tcgtgggtca 60
ttctgancac cgaactgacc atgccagccc tgccgatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtcctggaag gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggtcgggag cgtcccatc gccattcagg ctgcgcaact 240
gttgggaagg gcgatcggtg cgggectctt cgctattacg ccagctggcg aaagggggat 300
gtgctgcaag gcgattaagt tgggtaacgc caggggtttc ccagtcncga cgttgtaaaa 360
cgacggccag tgaattgaat ttaggtgacn ctatagaaga gctatgacgt cgcattgcacg 420
cgtacgtaag cttggatcct ctagagcggc cgcctactac tactaaattc gcggccgcgt 480
cgacgtggga tccnactga gagagtggag agtgacatgt gctggacnct gtccatgaag 540
cactgagcag aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aacaggttga acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncceca 660
gcatggatga cagagtgaaa ctccatctta aaaaaaaaaa aaaaaa 706
```

<210> 450

<211> 493

<212> DNA

<213> Homo sapiens

<400> 450

```
gagacggagt gtcactctgt tgcccaggct ggagtgcagc aagacactgt ctaagaaaaa 60
acagttttta aaggtaaaac aacataaaaa gaaatatcct atagtggaaa taagagagtc 120
aaatgaggct gagaacttta caaagggatc ttacagacat gtcgccaata tcactgcatg 180
agcctaagta taagaacaac ctttggggag aaacctcat ttgacagtga ggtacaattc 240
caagtcagggt agtgaaatgg gtggaattaa actcaaatta atcctgccag ctgaaacgca 300
agagacactg tcagagagtt aaaaagttag ttctatccat gaggtgatcc cacagtcttc 360
tcaagtcaac acatctgtga actcacagac caagttctta aaccactgtt caaactctgc 420
tacacatcag aatcacctgg agagctttac aaactcccat tgccgagggt cgacgcgggc 480
gcgaatttag tag 493
```

<210> 451

<211> 501

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (501)

<223> n = A,T,C or G

<400> 451

```
gggcgcgtcc cattcgccat tcaggtcgcg caactgttgg gaagggcgat cgggtgcgggc 60
ctcttcgcta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt 120
aacgccaggg ttttccagc cncgacgttg taaaacgacg gccagtgaat tgaatttagg 180
tgacnctata gaagagctat gacgtcgcat gcacgcgtac gtaagcttgg atcctctaga 240
gcggccgcct actactacta aattcgcgcc cgcgtcgacg tgggatccnc actgagagag 300
tggagagtga catgtgctgg acnctgtcca tgaagcactg agcagaagct ggaggcacia 360
cgcncacagc actcacagct actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgcaatga gctgagatca ggcnctgcn ccccagcatg gatgacagag tgaaactcca 480
tcttaaaaaa aaaaaaaaaa a 501
```

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(51)
 <223> n = A,T,C or G

<400> 452
 agacggtttc accnttacaa cnccttttag gatgggnntt ggggagcaag c 51

<210> 453
 <211> 317
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(317)
 <223> n = A,T,C or G

<400> 453
 tacatcttgc tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa 60
 acatctgaag agctagtcta tcagcatctg gcaagtgaat tggatgggtc tcagaaccat 120
 ttcacccana cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca 180
 taacaaaccc tgctccaatc tgtcacataa aagtctgtga cttgaagttt antcagcacc 240
 cccaccaaac tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataagg 300
 taccatgtc tttatta 317

<210> 454
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 454
 ttcgaggtag aatcaactct cagagtgtag ttctcttcta tagatgagtc agcattaata 60
 taagccacgc cagctcttg aaggagtctt gaattctctt ctgtcactc agtagaacca 120
 agaagaccaa attcttctgc atcccagctt gcaaacaaaa ttgttcttct aggtctccac 180
 ccttctttt tcagtgttcc aaagctctc acaatttcat gaacaacagc t 231

<210> 455
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 455
 taccaaagag ggcataataa tcagtctcac agtaggggtc accatcctcc aagtgaaaaa 60
 cattgttccg aatgggcttt ccacaggcta cacacacaaa acaggaaaca tgccaagttt 120
 gtttcaacgc attgatgact tctccaagga tcttctttg gcacgacca cattcagggg 180
 caaagaattt ctcatagcac agctcacaat acagggctcc tttctctct a 231

<210> 456
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 456
 ttggcaggta cccttacaaa gaagacacca taccttatgc gttattaggt ggaataatca 60
 ttccattcag tattatcggtt attattcttg gagaaacct gtctgtttac tgtaaccttt 120
 tgactcaaa ttcctttatc aggaataact acatagccac tatttacaaa gccattggaa 180

cctttttatt tgggtgcagct gctagtcagt cectgactga cattgccaag t 231

<210> 457

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(231)

<223> n = A,T,C or G

<400> 457

cgaggtaccc aggggtctga aaatctctnn ttantagtc gatagcaaaa ttgttcatca 60
gcattcctta atatgatctt gctataatta gatttttctc cattagagtt catacagttt 120
tatttgattt tattagcaat ctctttcaga agaccttga gatcattaag ctttgtatcc 180
agttgtctaa atcgatgctt catttcctct gaggtgtcgc tggcttttgt g 231

<210> 458

<211> 231

<212> DNA

<213> Homo sapiens

<400> 458

aggtctgggt cccccactt ccactccctt ctactctctc taggactggg ctgggccaag 60
agaagagggg tggtaggga agccgttgag acctgaagcc ccacctcta cttccttca 120
acaccctaac cttgggtaac agcatttgga attatcattt gggatgagta gaatttcaa 180
ggtcctgggt taggcatttt ggggggccag accccaggag aagaagattc t 231

<210> 459

<211> 231

<212> DNA

<213> Homo sapiens

<400> 459

ggtaccgagg ctgctgaca cagagaaacc ccaacgcgag gaaaggaatg gccagccaca 60
ccttcgcgaa acctgtggtg gccaccagt cctaaccgga caggacagag agacagagca 120
gccctgact gtttccctc caccacagcc atcctgtccc tcattggctc tgtgctttcc 180
actatacaca gtcaccgtcc caatgagaaa caagaaggag caccctccac a 231

<210> 460

<211> 231

<212> DNA

<213> Homo sapiens

<400> 460

gcaggtataa catgctgcaa caacagatgt gactaggaac ggccggtgac atggggaggg 60
cctatcacc cttcttggg ggctgcttct tcacagtgt catgaagcct agcagcaaat 120
ccacctccc cacacgcaca cgccagcct ggagcccaca gaagggtcct cctgcagcca 180
gtggagcttg gtcacgctc cagtccaccc ctaccaggct taaggataga a 231

<210> 461

<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

cgaggtttga gaagctctaa tgtgcagggg agccgagaag caggcggcct agggagggtc 60

gcgtgtgctc cagaagagtg tgtgcatgcc agaggggaaa caggcgctg tgtgtcctgg 120
gtgggggttca gtgaggagtg ggaaattggt tcagcagaac caagccgttg ggtgaataag 180
agggggattc catggcactg atagagccct atagtttcag agctgggaat t 231

<210> 462
<211> 231
<212> DNA
<213> Homo sapiens

<400> 462
aggtaccctc attgtagcca tgggaaaatt gatgttcagt ggggatcagt gaattaaatg 60
gggtcatgca agtataaaaa ttaaaaaaaa aagacttcat gcccaatctc atatgatgtg 120
gaagaactgt tagagagacc aacagggtag tgggttagag atttccagag tcttacattt 180
tctagaggag gtatttaatt tcttctcact catccagtgt tgtatttagg a 231

<210> 463
<211> 231
<212> DNA
<213> Homo sapiens

<400> 463
tactccagcc tggtagacaga gcgagaccct atcacgccccc cccacccccc caaaaaaaaa 60
actgagtaga caggtgtcct cttggcatgg taagtcttaa gtcccctccc agatctgtga 120
catttgacag gtgtcttttc ctctggacct cgggtgtccc atctgagtga gaaaaggcag 180
tggggagggtg gatcttccag tcgaagcggt atagaagccc gtgtgaaaag c 231

<210> 464
<211> 231
<212> DNA
<213> Homo sapiens

<400> 464
gtactctaag attttatcta agttgccttt tctgggtggg aaagtttaac cttagtgact 60
aaggacatca catatgaaga atgtttaagt tggaggtggc aacgtgaatt gcaaacaggg 120
cctgtctcag tgactgtgtg cctgtagtcc cagctactcg ggagtctgtg tgaggccagg 180
gggtgccagcg caccagctag atgctctgta acttctaggg cccattttcc c 231

<210> 465
<211> 231
<212> DNA
<213> Homo sapiens

<400> 465
catgttggtg tagctgtggt aatgctggct gcacttcaga cagggttaac ttcagtcctt 60
gtggcaaatt agcaacaaat tctgacatca tatttatggt ttctgtatct ttgttgatga 120
aggatggcac aatttttget tgtgttcata atatactcag attagttcag ctccatcaga 180
taaactggag acatgcagga cattagggta gtgtgtgtag tctggtaatg a 231

<210> 466
<211> 231
<212> DNA
<213> Homo sapiens

<400> 466
caggtaacctc tttccattgg atactgtgct agcaagcatg ctctccgggg tttttttaat 60
ggccttcgaa cagaacttgc cacataccca ggtataatag tttctaacct ttgccagga 120
cctgtgcaat caaatattgt ggagaattcc cttagctggag aagtcacaaa gactatagga 180
aataatggag accagtccca caagatgaca accagtcggt gtgtgcggt g 231

<210> 467
<211> 311
<212> DNA
<213> Homo sapiens

<400> 467
gtacaccctg gcacagtcca atctgaactg gttcggcact catctttcat gagatggatg 60
tggtggcttt tctccttttt catcaagact cctcagcagg gagcccagac cagcctgcac 120
tgtgccttaa cagaaggtct tgagattcta agtgggaatc atttcagtga ctgtcatgtg 180
gcatgggtct ctgcccagc tctgaatgag actatagcaa ggcggctgtg ggacgtcagt 240
tgtgacctgc tgggcctccc aatagactaa caggcagtgc cagttggacc caagagaaga 300
ctgcagcaga c 311

<210> 468
<211> 3112
<212> DNA
<213> Homo sapiens

<400> 468
cattgtgttg ggagaaaaac agaggggaga tttgtgtggc tgcagccgag ggagaccagg 60
aagatctgca tgggtgggaag gacctgatga tacagagttt gataggagac aattaaaggc 120
tggaaggcac tggatgcctg atgatgaagt ggactttcaa actggggcac tactgaaacg 180
atgggatggc cagagacaca ggagatgagt tggagcaagc tcaataacaa agtgggttcaa 240
cgaggacttg gaattgcatg gagctggagc tgaagtttag cccaattggt tactagttag 300
gtgaatgtgg atgattggat gatcatttct catctctgag cctcagggtc cccatccata 360
aaatgggata cacagtatga tctataaagt gggatatagt atgatctact tctctgggtt 420
atttgaagga tgaattgaga taatttattt cagggtgccta gaacaatgcc cagattagta 480
catttgggtg aactgagaaa tggcataaca ccaaatttaa tatatgtcag atgttactat 540
gattatcatt caatctcata gttttgtcat ggccaattt atcctcactt gtgctcaac 600
aaattgaact gttaacaaag gaatctctgg tctctgggtaa tggctgagca ccactgagca 660
tttccattcc agttggcttc ttgggtttgc tagctgcac actagtcac ttaaataaat 720
gaagttttaa catttctcca gtgattttt tatctcacct ttgaagatac tatgttatgt 780
gattaataaa agaacttgag aagaacagggt ttcattaaac ataaaatcaa tgtagacgca 840
aatcttctgg atgggcaata cttatgttca caggaaatgc tttaaataat gcagaagata 900
attaaatggc aatggacaaa gtgaaaaact tagacttttt tttttttttt ggaagtatct 960
ggatgttctt tagtcaacta aaggagaact gaaaaatagc agtgagttcc acataatcca 1020
acctgtgaga ttaaggctct ttgtggggaa ggacaaagat ctgtaaattt acagtttcct 1080
tccaaagcca acgtcgaatt ttgaaacata tcaaagctct tcttcaagac aaataatcta 1140
tagtacatct ttcttatggg atgcacttat gaaaaatggt ggctgtcaac atctagtcac 1200
tttagctctc aaaatgggtc attttaagag aaagttttag aatctcataat ttattcctgt 1260
ggaaggacag cattgtggct tggactttat aaggctctta ttcaactaaa taggtgagaa 1320
ataagaaagg ctgctgactt taccatctga ggccacacat ctgctgaaat ggagataatt 1380
aacatcacta gaaacagcaa gatgacaata taatgtctaa gtatgtacat gtttttgcac 1440
atttccagcc cctttaaata tccacacaca caggaagcac aaaaaggaagc acagagatcc 1500
ctgggagaaa tgcccggccg ccactctggg tcatcgatga gctcgcctt gtgctgggtc 1560
ccgcttgtga ggaaggaca ttagaaaatg aattgatgtg ttctttaaag gatgggcagg 1620
aaaacagatc ctgttgtgga tatttatttg aacgggatta cagatttgaa atgaagtcac 1680
aaagttagca ttaccaatga gaggaataa gacgagaaaa tcttgatggc ttcacaagac 1740
atgcaacaaa caaatggaa tactgtgatg acatgaggca gccaaagctgg ggaggagata 1800
accacggggc agagggtcag gattctggcc ctgctgccta aactgtgcgt tcataaccaa 1860
atcatttcat atttctaacc ctcaaaacaa agctgttgta atatctgac tctacgggtt 1920
cttctgggcc caacattctc catatatcca gccacactca tttttaatat ttagttccca 1980
gatctgtact gtgaccttct tacactgtag aataacatta ctcatcttgt tcaaagacc 2040
ttcgtgttgc tgcctaatat gtagctgact gtttttcta aggagtgttc tggcccagg 2100
gatctgtgaa caggctggga agcatctcaa gatctttcca gggttatact tactagcaca 2160
cagcatgatc attacggagt gaattatcta atcaacatca tctcagtggt ctttggccat 2220
actgaaattc atttcccact tttgtgcca ttctcaagac ctcaaatgt cattccatta 2280

atatcacagg attaactttt ttttttaacc tggaagaatt caatgttaca tgcagctatg 2340
ggaatttaat tacatatattt gttttccagt gcaaagatga ctaagtcctt tatccctccc 2400
ctttgtttga ttttttttcc agtataaagt taaaatgctt agccttgtag tgaggctgta 2460
tacagccaca gcctctcccc atccctccag ccttatctgt catcaccatc aaccctcccc 2520
atgcacctaa acaaaatcta acttgtaatt ccttgaacat gtcaggcata cattattcct 2580
tctgcctgag aagctcttcc ttgtctctta aatctagaat gatgtaaagt tttgaataag 2640
ttgactatct tacttcatgc aaagaaggga cacatatgag attcatcatc acatgagaca 2700
gcaaatacta aaagtgtaat ttgattataa gagtttagat aaatatatga aatgcaagag 2760
ccacagaggg aatgtttatg gggcacgttt gtaagcctgg gatgtgaagc aaaggcaggg 2820
aacctcatag tatcttatat aatatacttc atttctctat ctctatcaca atatccaaca 2880
agcttttcac agaattcatg cagtgcacaa ccccaaaggt aacctttatc catttcatgg 2940
tgagtgcgct ttagaatttt ggcaaatcat actggctact tatctcaact ttgagatgtg 3000
tttgccttg tagttaattg aaagaaatag ggactcttg tgagccactt tagggttcac 3060
tctgggcaat aaagaattta caaagagcaa aaaaaaaaaa aaaaaaaaaa aa 3112

<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

agctctttgt aaattcttta ttgccaggag tgaaccctaa agtggctcac aagagtgcgc 60
tatttcttcc aattaactac aaggacaaac acatctcaaa gttgagataa gtgaccagta 120
tgatttgcca aaattctaaa gcgcactcac catgaaatgg ataaagggtta cctttgggga 180
tttgactgct atgaattctg tgaaaagcct gttggatatt gtgatagaga tagagaaatg 240
aagtatatta tataagatac tatgagggtc cctgcctttg cttcacatcc caggcttaca 300
aacgtgcccc ataaacattc cctctgtggc tcttgcatct catatatcta tctaaactct 360
tataatcaaa tacactttta gtatttgctg tctcatgtga tgatgaatct catatgtgtc 420
ccttctttgc atgaagtaag atagtcaact tattcaaaac tttacatcat tctagattta 480
agagacaagg aagagcttct caggcagaag gaataatgta tgcctgacat gttcaaggaa 540
ttacaagtta gattttgttt aggtgcatgg gaggggttga tgggtgatgac agataaggct 600
ggagggatgg ggagaggctg tggctgtata cagcctcagt acaaggctaa gcattttaac 660
tttatactgg aaaaaaaatc aaacaaaggg gagggataaa ggacttagtc atctttgcac 720
tggaaaaacaa aatatgtaat taaattccca tagctgcatt taacattgaa ttcttcagg 780
ttaaaaaaaa agttaatcct gtgatattaa tggaaatgaca ttttgaggtc ttgagaatgg 840
gcacaaaagt gggaaatgaa tttcagtatg ggcaagaca ctgaggatga tgttgattag 900
ataattcact ccgtaatgat catgctgtgt gctagtaagt ataaccctgg aaagatcttg 960
agatgcttcc cagcctgttc acagatcccc tgggccagaa cactccttag gaaaaacagt 1020
cagctacata ttaggcagca acacgaaggg tctttgaaca aaatgagtaa tgttattcta 1080
cagtgtagaa aggtcacagt acagatctgg gaactaaata ttaaaaatga gtgtggctgg 1140
atatatggag aatgttgggc ccgaaggaa ccgtagagat cagatattac aacagctttg 1200
ttttgagggg tagaaatatg aaatgatttg gttatgaacg cacagtttag gcagcagggc 1260
cagaatcctg accctctgcc ccgtggttat ctcctcccca gcttggctgc ctcatgtcat 1320
cacagtattc cattttgttt gttgcatgtc ttgtgaagcc atcaagattt tctcgtctgt 1380
tttctctca ttggtaatgc tcactttgtg acttcatttc aaatctgtaa tcccgttcaa 1440
ataaatatcc acaacaggat ctgttttcc tgcctcctt taaggaacac atcaattcat 1500
tttctaattg ccttccctca caagcgggac caggcacagg gcgaggctca tcgatgacc 1560
aagatggcgg ccgggcattt ctcccaggga tctctgtgct tctttttgtg ctctctgtgt 1620
gtgtggtat ttaaaagggc tggaaatgtg caaaaacatg tcactactta gacattatat 1680
tgtcatcttg ctgtttctag tgatgttaat tatctccatt tcagcagatg tgtggcctca 1740
gatggtaaag tcagcagcct ttcttatttc tcacctggaa atacatacga ccatttgagg 1800
agacaaatgg caaggtgtca gcataccctg aacttgagtt gagagctaca cacaatatta 1860
ttggtttccg agcatcaca acaccctctc tgtttcttca ctgggcacag aattttaata 1920
cttatttcag tgggctgttg gcaggaacaa atgaagcaat ctacataaag tcaactagtgc 1980
agtgcctgac acacaccatt ctcttgaggt cccctctaga gatccacag gtcataatgc 2040
ttcttgggga gcagtggtc acacctgtaa tccagcact ttgggaggct gaggcaggtg 2100
ggtcacctga ggtcaggagt tcaagaccag cctggccaat atggtgaaac cccatctcta 2160
ctaaaaatc aaaaatttagc tgggcgtgct ggtgcatgcc tgtaatccca gcccacac 2220

2229

aatggaatt

<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

```

gtaaattcctt tattgccagg agtgaaccct aaagtggctc acaagagtgc cctatttctt 60
tcaattaact acaaggacaa acacatctca aagttgagat aagtgaccag tatgatttgc 120
caaaattcta aagcgactc accatgaaat ggataaagggt tacctttggg gatttgact 180
gcatgaattc tgtgaaaagc ttgttgata ttgtgataga gatagagaaa tgaagtatat 240
tatataagat actatgaggt tccctgcctt tgcttcacat cccaggctta caaacgtgcc 300
ccataaacat tccctctgtg gctcttgcct ttcatatatt tatctaaact cttataatca 360
aattacactt ttagtatttg ctgtctcatg tgatgatgaa tctcatatgt gtcccttctt 420
tgcatgaagt aagatagtca acttattcaa aactttacat cattctagat ttaagagaca 480
aggaagagct tctcaggcag aaggaataat gtatgcctga catgttcaag gaattacaag 540
ttagattttg tttagtgca tgggaggggt tgatgggtgat gacagataag gctggaggga 600
tggggagagg ctgtggctgt atacagctc agtacaaggc taagcatttt aactttatc 660
tggaaaaaaa atcaaacaaa ggggagggat aaaggactta gtcattcttg cactggaaaa 720
caaaatatgt aattaaattc ccatagctgc atgtaacatt gaattcttcc aggttaaaaa 780
aaaaagttaa tctgtgata ttaattggaat gacattttga ggtcttgaga atgggcacaa 840
aagtgggaaa tgaatttcag tatgggcaaa gacactgagg atgatgttga ttagataatt 900
cactccgtaa tgatcatgct gtgtgctagt aagtataacc ctggaaagat cttgagatgc 960
ttccagcct gttcacagat cccctgggcc agaactcctc ttaggaaaaa cagtcagcta 1020
catattagtc agcaacacga agggctcttg aacaaaatga gtaatgttat tctacagtgt 1080
agaaaggtca cagtacagat ctgggaacta aatattaaaa atgagtgttg ctggatatat 1140
ggagaatgtt gggcccagaa ggaaccgtag agatcagata ttacaacagc ttgttttga 1200
gggttagaaa tatgaaatga tttggttatg aacgcacagt ttaggcagca gggccagaat 1260
cctgaccctc tgcccgtgg ttatctctc cccagcttgg ctgctcatg tcatcacagt 1320
attccatttt gttgttgca tgtcttgtga agccatcaag atttctcgt ctgttttct 1380
ctcattggta atgctcactt tgtgacttca tttcaaact gtaatcccgt tcaataaat 1440
atccacaaca ggtctgttt tctgcccct cctttaagga acacatcaat tcattttcta 1500
atgtccttcc ctcaacagc ggaccaggca cagggcgagg ctcatcgatg acccaagatg 1560
gcggccgggc atttctccca gggatctctg tgcttcttct tgtgcttct gtgtgtgtg 1620
atatttaaa gggctggaaa tgtgcaaaaa catgtcacta cttagacatt atattgtcat 1680
cttgcgtgtt ctagtgtatg taattatctc catttcagca gatgtgtggc ctcagatgg 1740
aaagtcagca gcctttctta tttctcacct ggaaatacat acgaccattt gaggagacaa 1800
atggcaagg gtcagcatac cctgaacttg agttgagagc tacacacaat attatttggt 1860
tccgagcatc acaaacaccc tctctgtttc ttcactgggc acagaatttt aatactatt 1920
tcagtgggct gttggcagga acaaatgaag caatctacat aaagtcacta gtgcagtgc 1980
tgacacacac cattctcttg aggtcccctc tagagatccc acaggtcata tgacttcttg 2040
gggagcagtg gctcacacct gtaatcccag cactttggga ggctgaggca ggtgggtcac 2100
ctgaggtcag gagttcaaga ccagcctggc caatatgggt aaaccccatc tctactaaaa 2160
atacaaaaat tagctggcg tgctgggtgca tgcctgtaat cccagctact tgggaggtg 2220
aggcaggaga attgctggaa catgggaggg ggaggttgca gtgagctgta attgtgccat 2280
tgcactcgaa cctgggcgac agagtgggaa tctgtttcca aaaaacaaac aaacaaaaaa 2340
ggcatagtca gatacaacgt ggggtgggatg tgtaaataga agcaggatat aaagggcatg 2400
gggtgacggt tttgcccac acaatg 2426

```

<210> 471

<211> 812

<212> DNA

<213> Homo sapiens

<400> 471

```

gaacaaaatg agtaatgtta ttctacagt tagaaaggc acagtacaga tctgggaact 60
aatattaaa aatgagtgtg gctggatata tggagaatgt tgggcccaga aggaaccgta 120

```

```

gagatcagat attacaacag ctttgttttg agggttagaa atatgaaatg atttggttat 180
gaacgcacag ttaggcagc agggccagaa tcctgaccct ctgccccgtg gttatctcct 240
ccccagcttg gctgcctcat gtcacacag tattccattt tgtttggtgc atgtcttggt 300
aagccatcaa gattttctcg tctgttttcc tctcattggg aatgctcact ttgtgacttc 360
atttcaaatc tgtaatcccg ttcaaataaa tatccacaac aggatctggt ttcttgccca 420
tcctttaagg aacacatcaa ttcatcttct aatgtccttc cctcacaagc gggaccaggc 480
acagggcgag gctcatcgat gacccaagat ggcgccggg catttctccc agggatctct 540
gtgcttccct ttgtgcttcc tgtgtgtgtg gatattttaa ggggctggaa atgtgcaaaa 600
acatgtcact acttagacat tatattgtca tcttgtctgt tctagtgatg ttaattatct 660
ccatttcagc agatgtgtgg cctcagatgg taaagtacgc agcctttctt atttctcacc 720
tctgtatcat caggtccttc ccaccatgca gatcttctcg gtctccctcg gctgcagcca 780
cacaatatct ccctctgttt ttctgatgcc ag

```

812

<210> 472

<211> 515

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(515)

<223> n = A,T,C or G

<400> 472

```

acggagactt attttctgat attgtctgca tatgtatggt tttaagagtc tggaaatagt 60
cttatgactt tcctatcatg cttattaata aataatacag cccagagaag atgaaaatgg 120
gttccagaat tatttggtcct tgcagcccg tgaatctcag caagaggaac caccaactga 180
caatcaggat attgaacctg gacaagagag agaaggaaca cctccgatcg aagaacgtaa 240
agtagaaggt gattgccagg aaatggatct ggaaaagact cggagtgagc gtggagatgg 300
ctctgatgta aaagagaaga ctccacctaa tcttaagcat gctaagacta aagaagcagg 360
agatgggcag ccataagtta aaaagaagac aagctgaagc tacacacatg gctgatgtca 420
cattgaaaat gtgactgaaa atttgaaaat tctctcaata aagtttgagt tttctctgaa 480
gaaaaaaaaa naaaaaaaaa aaanaaaaan aaaaa

```

515

<210> 473

<211> 5829

<212> DNA

<213> Homo sapiens

<400> 473

```

cgcattgccg ggaagcccaa gctggctcga agagccacca gccacctgtg caaggggtggg 60
cctggaccag ttggaccagc caccaagctc acctactcaa ggaagcaggg atggccagggt 120
tgcaacagcc tgagtggctg ccacctgata gctgatggag cagaggcctg aggaaaatca 180
gatggcacat ttagctcttt aatggatctt aagttaattt ttctataaag cacatggcac 240
cagtccatgc ctcagagctc gtatggcact gcgaccaca gcaggccgag ttcccaggat 300
tgccatccag gggggccttc ttagccctg gccagacctt gcagaggtgg ctgggtgctc 360
tttgagcgag ctgcgcttcc ctggcatgca caggccccag gtactgacac gctgctctga 420
gtgagcttgt cctgccttgg ctgccacctt actgctgatg gagcagcggc cttaggaaaa 480
gcaaatggcg ctgtagccca actttagggg agaagaagat gtaccatgtc cggccgctag 540
ttgggtgact gtgcacctgc tcctggcgta cccttgca ggtgggtggg tgctctttgg 600
ccagcttggc cttgcctggc atgcacaagc ctcagtgcaa caactgtcct acaaatggag 660
acacagagag gaaacaagca gcgggctcag gagcagggtg tgtgtgcctt ttggggctcc 720
agtccatgcc tcgggtcgta tggtactgca ggcttcttgg ttgccaagag gcggaccaca 780
ggccttcttg agggagactt tacgttcaag tgcaaaaagc agccaaaatt accatccatg 840
agactaagcc ttctgtggcc ctggcgagac ttaaaatttg tgccaaggca ggcaagctc 900
actcggagca gcgtgtcagt agctggggcc tatgcatgcc gggcagggcc gggctggctg 960
aaggagcaac cagccacctc tgcaagggtg cgcctagtgc aggcggagca tccaccacct 1020
caccgcctcg aggaagtggg gatggccagg ttcccacagc ctgagtgtct gccaccttat 1080

```

tgctgatgga gcagaggcct taagaaaagc agatggcact gtggccctac ctttaggggtg 1140
gaagaagtga tgtacatgtc cggacgctaa ttgggtgactg gtacaccggc tcttgctaca 1200
cctttgcaga ggtggctggt tgctctttga gccagcttgt ccttgcccgg catgcacaag 1260
tttcagtga acaactttgc caaaaatgga gccatataga ggaaacaaga agcaggttca 1320
ggagaagggg gtaccctgcc tttggggctc cagtcctatgc ctcaggtgtc acatggcact 1380
gcgggcttct tggttgccag gaggcggacc acaggccatc ttggggagga ctttgtgttc 1440
aagtgcagaa agcagccagg attgccatcc agggggacct tctatagccc tggccaaacc 1500
ttgcaggggt gtctgggtgc tctttgagcc ggcttgccct ccttgccatg caggggcccc 1560
agggtgctggc acgtgtctcc gagtgtgctt gtccctgcctt ggctggccacc tctgcggggg 1620
tgctgtctgga gggggtggac cggccaccaa ccttaccagg tcaaggaagt ggatggccat 1680
gttcccacag cctgagtggtc tgccacctga tggctgatgg agcaaaggcc ttaggaaaag 1740
cagatggccc ttggccctac ctttttgta gaagaactga tgttccatgt cctgcagcga 1800
gtgaggttgg tggctgtgcc ccagctcctt ggcgcgcctt cgcagaggtg actggttgct 1860
ctttgggccc tcttgccctt gccagcatg cacaagcctc agtgtacta ctgtgtaca 1920
aatggagcca tataggggaa acgagcagcc atctcaggag caaggtgtat gctgcctttg 1980
ggggctccag tcttgccctc aagggtctta tgtcactgtg ggcctcttgg ttgtcaagag 2040
gcagaccata ggccgtcttg agagggactt tatgttcaag tgcagaaaagc agccaggatt 2100
gccaccctcg ggactctgcc ttctgtggcc ctggccaaac ttagaatttg gccgtagaca 2160
ggacaggctc acttggaagta gcgtgtccgt agctgggggtc tgtgcatgcc gggcaaggcc 2220
gggctggctc ggggagcaac cagccacctc tgcgggggtg cgcctggagc aggtggagca 2280
ggccaccagt cccaccctcc aggaagccgg ggtagccagg ttcccaaggc ctgagtgggt 2340
gccacctaat ggctgaagaa acagaggcct tgggaaaacc agatggcact gtggccctac 2400
ctttatggta gaagagctga tttagcctga ctggcagcgt gtgggggttg tggctgggtc 2460
gcctgctgct ggcgcatccg tgcaaggatg gctgggttgc ctttgagcca gcttgccctt 2520
gccggcatg cgaagcctc agtgcaacaa ctgtgtgca aatggggcca tatagaggaa 2580
aggagcagct ggctctggag catggtgtgc actcccttgg ggccttcagt ccatgtctca 2640
tgggtcgat gacactgcgg gcttgttgg tcccaagagg cagaccacag gtcacttga 2700
ggaggacttt atgttccagt ccagaaagca gccagtggta ccaccaggg gacttgtgct 2760
tctgtgcccc ggccagacgt agaatttgac aaagtcagga cggctctcagt cagagcggcg 2820
tgtcggtccc cggggcctgt gcatgccggg cagggccggg ctggcttggg gagcaagcag 2880
ccacctctgt taaggggtgt cctggagcag gtggagcagc caccaacctc acgcactgaa 2940
agaagcaggg atggccagg tccaacatcc tgagtggctg ccacctgatg gctgatggag 3000
cagaggcctg aggaaaagca gatggcactg ctttgtatg ctgttctttg tctctcttga 3060
ctttccattt gcttggtaaa ttttatcaga gactaggatt gcaaaccctg ctcttttttg 3120
gcacatgaga tgggtctcct gaatacagga caacaatggg tctttactct ttatccaact 3240
tgccagtctg tgccttttaa ctggggcatt tagccattt acatttaagt ttagtattgt 3300
tacatgtgaa atttatcctg tcatgatgtt gctagctttt tatttttccc attagtttgc 3360
agtttcttta tagtgtcaat ggtctttaca attcgatatg tttttgtagt ggctgggtact 3420
ggtttttctt ttctacgttt agtgtctcct tcaggagctc ttgtaacaca agaattgtga 3480
tttatttctt gtaaggtaaa tatgtggatt tatttcttgg gactgtattc tatggccttt 3540
accccaagaa tcattacttt ttaaaatgca attcaaatta gcataaaaaca tttacagcct 3600
atggaaaaggc ttgtggcatt agaatcctta tttataggat tattttgtgt ttttttgaga 3660
tatggtcttt gtcacgagg cagaagtgcc gtggtttgat cataattcac cacagccctg 3720
aactcttgag tccaagccat ccttttgccct taatctccca accagttgga tctgcaggca 3780
taaggcatca tgcgtggcta attttttcac gttttttttt ttttttgtc gagattatgg 3840
tgtcactgtg ttgctctggc tgatctcaaa tgtttgacct caagggatct ttctgccacg 3900
gcctcctaaa gtgctaggat tatatgcatg atacaccatg cctattgtag agtattacat 3960
tattttcaaa gtcttattgt aagagccatt tattgccttt ggcctaaata actcaatata 4020
atatctctga aacttttttt tgacaaattt tggggcgta tgatgagaga aggggggttg 4080
aaactttcta ataagagtta acttagagcc atttaagaaa ggaaaaaaca caaattatca 4140
gaaaaacaac agtaagatca agtgcaaaag ttctgtggca aagatgatga gagtaagaa 4200
tatatgtttg tgactcatgg tggcttttac tttgttcttg aatttctgag tacgggttaa 4260
catttaaaga atctacatta tagataacat tttattgcaa gtaaatgtat ttcaaaattt 4320
gttattgggt ttgtatgaga ttattctcag cctacttcat tatcaagcta tattatttta 4380
ttaatgtagt tcatgatctc tacagcaaaag ctgaaagctg tatcttcaaa atatgtctat 4440
tgactaaaa agttatttcaa caggagttat tatctataaa aaaaatacaa caggaatata 4500
aaaaacttga ggataaaaag atgttggaag aagtaatat aaatcttaaa aaacatatgg 4560

aaactacaca atggtgaaga cacattggtg aagtacaaaa atataaattg gatctagaag 4620
aaagggcaat gcaggcaata gaaaaattag tagaaatccc tttaaagggt agtttgtaaa 4680
atcaggtaag tttatttata atttgcttcc atttatttca ctgcaaatta tattttggat 4740
atgtatatat attgtgcttc ctctgctgtg cttacagcaa tttgccttgc agagttctag 4800
gaaaaagggt gcattgtgtt ttactttcaa aatattttaa tttccatcat tataacaaaa 4860
tcaatttttc agagtaatga ttctcactgt ggagtcattt gattattaag acccgttggc 4920
ataagattac atcctctgac tataaaaaatc ctggaagaaa acctaggaaa tattcgtctg 4980
gacattgcac ttggcaatga atttatgggt aaccactgat ccacttccag tcactatcca 5040
tgagttttta ttccagata catgaaatca tatgagttga aactttcttt tgattgagca 5100
gtttggaaac cgtctttttg tagaatctgc aagtggatat ttggaaccct ttgaggccta 5160
tgctgaaaaa agaaatatct tctactacatg atgaccacca gcagcagctg gggaaaccag 5220
caccctgtgg aattccatac ggtgcataga atacatctcc ccttcagctg gcttgggtca 5280
acttaggtca tgggccacct ggctgatagc agtttccaca gaaatgcttc aagatgaaag 5340
tggatgaccg tggccacctc caccactgcc ctgtaagacc atgggacaca caggccacca 5400
gtttcttttca tgtggtcacc cctgtttaga tgggagaaaa tacacctgcc tcatttttgt 5460
accttctgtg tgaacattcc acggcagact gtcgctaaat gtggatgaag aattgaatga 5520
atgaatgaat atgagagaaa atgaataaat ggttcagatc ctgggctgga aggctgtgta 5580
tgaggatggt gggtagagga gggctctgtt ttcttgctt taagtcacta attgtcactt 5640
tggggcagga gcacaggctt tgaatgcaga ccgactggac ttaattctg gctttactag 5700
ttgtgattgt gtgacctgtt gaaagttact taaacctct gtgctgttt ctttatctgt 5760
aaaatggaga taataagatg tcaaaggact gtggtgaaga ttaaatgctt taaaaaaaaa 5820
aaaaaaaaa 5829

<210> 474

<211> 1594

<212> DNA

<213> Homo sapiens

<400> 474

atztatggat cattaatgcc tcttttagtag tttagagaaa acgtcaaaaag aaatggcccc 60
agaataagct tcttgatttg taaaattcta tgtcattggc tcaaatttgt atagtatctc 120
aaaatataaa tatatagaca tctcagataa tatatttgaa atagcaaatt cctgttagaa 180
aataatagta ctttaactaga tgagaataac aggtcgccat tatttgaatt gtctcctatt 240
cgtttttcat ttgttggtgt actcatgttt tacttatgag ggatatatat aacttccact 300
gttttcagaa ttattgtatg cagtcagtat gagaatgcaa tttaagtctc cttgatgctt 360
tttcacactt ctattactag aaataagaat acagtaatat tggcaaagaa aattgaccag 420
ttcaataaaa ttttttagta aatctgattg aaaataaaca ttgcttatgg ctttcttaca 480
tcaatattgt tatgtcctag acaccttacc tgaaattacg gcttcaaaaat tctaattatg 540
tgcaaatgtg taaaatatca atactttatg ttcaagctgg ggcctcttca ggcgtcctgg 600
gctgagagag aaagatgcta gctccgcaag ccggagaggg aacaccgcca cattgttaca 660
cggacacacc gccacgtgga cacatgacca gactcacatg tacagacaca cggagacatt 720
accacatgga gacacgtca cacagtaca cggacacact ggcatagtca catggacgga 780
cacacagaca tatggagaaa tcacatggac acaccaccac actatcacag ggacacagac 840
acacggagac atcaccacat ggacacactg tcacactacc acagggacac gagacatcac 900
actgtcacat ggacacacca tcacacacat gaacacaccg acacactgcc atatggacac 960
tggcacacac actgccacac tgtcacatgg acacacctcc acaccatcac accaccacac 1020
acactgctgt tggacacaag gacacacaga cactgtcaca cagatacaca aaacactgtc 1080
acacggagac atcaccatgc agatacacca ccactctggt gccgtctgaa ttaccctgct 1140
gggggggacag cagtggcata ctcatgccta agtgactggc ttccacccca gtatgattg 1200
ccctccatca acactgccc cccaggttg gggctacccc agcccatctt tacaaaacag 1260
ggcaagggtg actaatggag tgggtggagg agttggaaga aatcccagcg tcagtaccg 1320
ggatagaatt cccaaggaa cctctttttg gaggatggtt tccatttctg gaggcgatct 1380
gccgacaggg tgaatgcctt cttgcttgte ttctgggaa tcagagagag tccgttttgt 1440
ggtgggaaga gtgtggctgt gtactttgaa ctctgtgaaa ttctctgact catgtccaca 1500
aaaccaacag ttttgtgaat gtgtctggag gcaagggaag ggccactcag gatctatgtt 1560
gaaggggaaga ggctggggc tggagtattc gctt 1594

<210> 475


```

aaactacaca atggtgaaga cacattggtg aagtacaaaa atataaattg gatctagaag 4620
aaagggcaat gcaggcaata gaaaaattag tagaaatccc tttaaagggt agtttgtaa 4680
atcaggtaag tttatttata atttgcttcc atttatttca ctgcaaatta ttttttgat 4740
atgtatatat attgtgcttc ctctgctgtg cttacagcaa tttgccttgc agagttctag 4800
gaaaaagggt gcatgtgttt ttactttcaa aatattttaa tttccatcat tataacaaaa 4860
tcaatttttc agagttaatga ttctcactgt ggagtcattt gattattaag acccgttggc 4920
ataagattac atcctctgac tataaaaaatc ctggaagaaa acctaggaaa tattcgtctg 4980
gacattgcac ttggcaatga atttatgggt aaccactgat ccacttcag tcaatatcca 5040
tgagttttta ttccagata catgaaatca tatgagttga aactttcttt tgattgagca 5100
gtttggaaac cgtctttttg tagaatctgc aagtggatat ttggaaccct ttgaggccta 5160
tgctgaaaaa agaaatatct tcaactacatg atgaccacca gcagcagctg gggaaaccag 5220
caccctgtgg aattccatac ggtgcataga atacatcttc cttcagtcg gcttgggtca 5280
acttaggtca tgggcacact ggctgatagc agtttccaca gaaatgcttc aagatgaaag 5340
tggatgaccg ggccaccctc caccactgcc ctgtaagacc atgggacaca caggccacca 5400
gttcttttca tgtggtcatc cctgtttaga tgggagaaaa tacacctgcc tcatTTTTgt 5460
accttctgtg tgaacattcc acggcagact gtcgctaaat gtggatgaag aattgaatga 5520
atgaatgaat atgagagaaa atgaataaat ggttcagatc ctgggtgga aggcgtgtga 5580
tgaggatggt gggtagagga gggctctgtt ttcttgctt taagtacta attgtcactt 5640
tggggcagga gcacaggctt tgaatgcaga ccgactggac tttaattctg gctttactag 5700
ttgtgattgt gtgacctgtt gaaagtact taaacctct gtgctgttt ctttatctgt 5760
aaaaatggaga taataagatg tcaaaggact gtggttaagaa ttaaatgctt taaaaaaaaa 5820
aaaaaaaaa 5829

```

<210> 474

<211> 1594

<212> DNA

<213> Homo sapiens

<400> 474

```

atztatggat cattaatgcc tcttttagtag tttagagaaa acgtcaaaaag aaatggcccc 60
agaataagct tcttgatttg taaaattcta tgtcattggc tcaaatttgt atagtatctc 120
aaaatataaa tatatagaca tctcagataa tatatttgaa atagcaaatt cctgttagaa 180
aataatagta cttactaga tgagaataac aggtcgccat tatttgaatt gtctcctatt 240
cgtttttcat ttgttgtgtt actcatgttt tacttatgag ggatatatat aacttccact 300
gttttcagaa ttattgtatg cagtcagtat gagaatgcaa ttaagtttc cttgatgctt 360
tttcacactt ctattactag aaataagaat acagtaatat tggcaaagaa aattgaccag 420
ttcaataaaa ttttttagta aatctgattg aaaataaaca ttgcttatgg ctttcttaca 480
tcaatattgt tatgtcctag acaccttacc tgaaattacg gcttcaaat tctaattatg 540
tgcaaatgtg taaaatatca atactttatg ttcaagctgg ggctcttca ggcgtcctgg 600
gctgagagag aaagatgcta gctccgcaag cgggagaggg aacaccgcca cattgttaca 660
cggacacacc gccacgtgga cacatgacca gactcacatg tacagacaca cggagacatt 720
accacatgga gacaccgtca cacagtcaca cggacacact ggcatagtca catggacgga 780
cacacagaca tatggagaaa tcacatggac acaccaccac actatcacag ggacacagac 840
acacggagac atcacacat ggacacactg tcacactacc acagggacac gagacatcac 900
actgtcacat ggacacacca tcacacacat gaacacaccg acacactgcc atatggacac 960
tggcacacac actgccacac tgtcacatgg acacacctcc acaccatcac accaccacac 1020
acactgcctg tggacacaag gacacacaga cactgtcaca cagatacaca aaacactgtc 1080
acacggagac atcaccatgc agatacacca ccactctggt gccgtctgaa ttacctgtct 1140
ggggggacag cagtggcata ctcatgcta agtgactggc tttcacccca gtagtgattg 1200
ccctccatca acactgccc cccaggttg gggctacccc agcccatctt taaaaacag 1260
ggcaagtgta cctaaggaac cctctttttg aggttgagg agttggaaga aatcccagcg tcagtcaccg 1320
ggatagaatt cccaaggaac cctctttttg gaggatggtt tccatttctg gaggcgatct 1380
gccgacaggg tgaatgcctt cttgcttgtc ttctggggaa tcagagagag tccgttttgt 1440
gggtgggaaga gtgtggctgt gtactttgaa ctctgtaaa ttctctgact catgtccaca 1500
aaaccaacag ttttgtgaat gtgtctggag gcaaggggag ggccactcag gatctatgtt 1560
gaagggaaga ggcctggggc tggagtattc gctt 1594

```

<210> 475

<211> 2414
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> (33)
<223> n=A,T,C or G

<400> 475
cccaacacaa tggctttata agaatgcttc acntgtgaaa aacaaatata aaagtcttct 60
tgtagattat ttttaaggac aaatctttat tccatgttta atttatttag ctttccctgt 120
agctaattat tcatgctgaa cacattttaa atgctgtaaa tgtagataat gtaatttatg 180
tatcattaat gcctcttttag tagtttagag aaaacgtcaa aagaaatggc ccagaaataa 240
gcttcttgat ttgtaaaatt ctatgtcatt ggctcaaatt tgtatagtat ctcaaaatat 300
aaatatatag acatctcaga taatatattt gaaatagcaa attcctgtta gaaaataata 360
gtacttaact agatgagaat aacaggctgc cattatttga attgtctcct attcgttttt 420
catttggtgt gttactcatg ttttacttat ggggggatat atataacttc cgctgttttc 480
agaagtattg tatgcagtcg gtatgagaat gcaatttaag tttccttgat gctttttcac 540
acttctatta ctagaaataa gaatacagta atattggcaa agaaaattga ccagttcaat 600
aaaatttttt agtaaatctg attgaaataa aacattgctt atggctttct tacatcaata 660
ttgttatgtc ctagacacct tatctgaaat tacggcttca aaatttcaat tatgtgcaaa 720
tgtgtaaaat atcaatactt tatgttcaag ctggggcctc ttcaggcgct ctgggctgag 780
agagaaagat gctagctccg caagccgggg agggaaacacc gccacattgt tacatggaca 840
caccgccacg tggacacatg accagactca catgtacaga cacacggaga cattaccaca 900
tggagacacc gtcacacagt cacacagaca cactggcata gtcacatgga cggacacaca 960
gacatatgga gaaatcacac tgacacacca ccacactatc acagggacac agacacacgg 1020
agacatcacc acatggacac actgtcacac taccacaggg acacgagaca tcacactgtc 1080
acatggacac accatcacac acatgaacac accgacacac tgccatatgg acaetgccac 1140
acacactgcc acactgtcac atggacacac ctccatacca tcacaccacc acacacactg 1200
ccatgtggac acaaggacac acagacactg tcacacagat acacaaaaca ctgtcacacg 1260
gagacatcac catgcagata caccaccaca tggacatagc accagacact ctgccacaca 1320
gatacaccac cacacagaaa tgcggacaca ctgccacaca gacaccacca catcgttgcc 1380
acactttcat gtgtcagctg gcggtgtggg cccacgact ctgggctcta atcgagaaat 1440
tacttggaac tatagtgaag gcaaaatttt tttttatttt ctgggtaacc aagcgcgact 1500
ctgtctcaaa aaaagaaaaa aaaagcaata tactgtgtaa tcgttgacag cataattcac 1560
tattatgtag atcggagagc agaggattct gaatgcatga acatatcatt aacatttcaa 1620
tacattactc ataattactg atgaactaaa gagaaaccaa gaaattatgg tgatagttaa 1680
attgacctgg agaaatgtag acacaaaaga accgtaagat gagaaatgtg ttaacacagt 1740
ctataagggc atgcaagaat aaaaataggg gagaaaacag gagagttttt caagagcttt 1800
ctggtcattg aagtcactt gtatcgggta atttttaaaa ggtttattta catgcaataa 1860
actgcacata cttcaattgt acatttttgt aattcttggc attttagct ctataaaacc 1920
agcaacatat taaaatagca aacatatcca ttacctttac caccaaagt ttcttgtgtt 1980
ttttctactc acttttttct gcctatcccc ccatctcttc cacaggtaac cactgatcca 2040
cttccagtca ctatccatga gtttttattt ccaaatacat gaaatcatat gaatttctgg 2100
tttttctgtg tggagcccaa ggagcaaggg cagaatgagg aacatgatgt ttcttwccga 2160
cagttactca tgacgtctcc atccaggact gaggggggca tccttctcca tctaggactg 2220
ggggctactc tctccatcca gtattggggg tcattcttct ccattccagta ttgggggtca 2280
tcctcttcca tccaggacct gaggggtgtc ctttctgcg cttcttggga tggcagttct 2340
tccttctcatg tttatagtra cttaccatta aatcactgtg ccgttttttc ctaaaataaa 2400
aaaaaaaaaa aaaa 2414

<210> 476
<211> 3434
<212> DNA
<213> Homo sapiens

<400> 476

ctgtgctgca aatggggcca tatagaggaa aggagcagct ggctctggag catgggtgtgc 60
actccctttg ggccttcagt ccatgtctca tgggtcgtat gacactgcgg gcttgttggg 120
tgccaagagg cagaccacag gtcactctga ggaggacttt atgttccagt ccagaaaagca 180
gccagtggta ccaccaggg gacttgtgct tctgtggccc aggccagacg tagaatttga 240
caaagtccagg acgggtctcag tcagagcagc atgtcgggtc ccggggcctg tgcattgccg 300
gcagggccag gctggcttaa ggagcaagca gccacctctg ttaggggtgt gcctggagca 360
gggtggagcag ccaccaacct cagcactga aagaagcagg gatggccagg ttccaacatc 420
ctgagtggct gccacctgat ggctgatgga gcagaggcct gaggaaaagc agatggcact 480
gctttgtagt gctgttcttt gtctctcttg atctttttca gttaatgtct gttttatcag 540
agactaggat tgcaaacct gctctttttt gctttccatt tgcttggtaa atattcctcc 600
atccctttat ttaagccta tgtgtgtctt tgcacatgag atgggtctcc tgaatacagg 660
acaacaatgg gtctttactc tttatccaac ttgccagtct gtgtctttta actggggcag 720
ttagccatt tacatttaag tttagtattt gttacatgtg aaatttatcc tgtcatgatg 780
ttgctagctt tttatttttc ccattagttt gcagtttctt tatagtgtca atgggtctta 840
caattcgata tgtttttgta gtggctggta ctggtttttc cttctacgt ttagtgtctc 900
cttcaggagc tcttgaaca caagaatgtg gatttatttc ttgtaaggta aatatgtgga 960
tttattctgg gactgtatc tatggccttt accccaagaa tcattacttt taaaatgca 1020
attcaaatga gcataaaaca tttacagcct atggaaaggc ttgtggcatt agaactccta 1080
tttataggat tatttgtgt ttttttgaga tatgttcttt gtcacgagg cagaagtgcc 1140
gtggtttgat cataattcac cacagccctg aactcttgag tccaagccat ctttttgctc 1200
taatctccca accagttgga tctacaagca taaggcatca tgcgtggcta attttttcac 1260
gttttttttt tttttgtcga gattatggta tcaactgtgt gctctggctg atctcaaatg 1320
tttgacctca agggatcttt ctgccacagc ctccataaagt gctaggatta tatgcatgat 1380
acaccatgcc tattgtagag tattacatta ttttcaaagt cttattgtaa gagccattta 1440
ttgcctttgg cctaaataac tcaatataat atctctgaaa cttttttttg acaatttttg 1500
gggcgtgatg atgagagaag ggggtttgaa aactttctaag aagagttaac ttgagccat 1560
ttaagaaagg aaaaaacaca aattatcaga aaaacaacag taagatcaag tgcaaaagt 1620
ctgtggcaaa gatgatgaga gtaagaata tatgtttgtg actcatgggt gcttttactt 1680
tgttcttgaa tttctgagta cgggttaaca tttaaagaat ctacattata gataacattt 1740
tattgcaagt aaatgtattt caaaatttgt tattggtttt gtatgagatt attctcagcc 1800
tacttcatta tcaagctata ttattttatt aatgtagtcc gatgatctta cagcaagct 1860
gaaagctgta tcttcaaat atgtctattt gactaaaaag ttattcaaca ggagtatta 1920
tctataaaaa aatacaacag gaataaaaaa aacttgagga taaaaagatg ttggaaaaag 1980
taatattaaa tcttaaaaaa catatggaaa ctacacaatg gtgaagacac attggtgaag 2040
tacaaaaata taaattggat ctagaagaaa gggcaatgca ggcaatagaa aaattagtag 2100
aaatcccttt aaaggttagt ttgtaaaatc aggttaagttt atttataatt tgctttcatt 2160
tatttcactg caaattatat ttggatatg tatatatatt gtgcttcctc tgccctgtctt 2220
acagcaattt gccttgcaag gttctaggaa aaaggtggca tgtgttttta ctttcaaat 2280
atttaaatat ccattcattt aacaaaatca atttttcaga gtaatgattc tcaactgtgga 2340
gtcattttgat tattaagacc cgttggcata agattacatc ctctgactat aaaaatccctg 2400
gaagaaaacc taggaaatat tgcgtctggac attgcacttg gcaatgaatt tatgggcgtc 2460
ttggaatcct gcagatataa taatgataat taaacaaaac actcagagaa actgccaacc 2520
ctaggatgaa gtatattgtt actgtgcttt gggattaaaa taagtaacta cagtttatag 2580
aacttttata ctgatacaca gacactaaaa agggaaaggg tttagatgag aagctctgct 2640
atgcaatcaa gaatctcagc cactcatttc ttagggggtc gcaggagctc cctgtaaaga 2700
gaggttatgg agtctgtagc ttcaggtaag atacttaaaa cccttcagag tttctccatt 2760
ttttcccata gtttcccaa aaaggttatg acactttata agaatgcttc acttgtgaaa 2820
aacaatatc aaagtcttct tgtagattat ttttaaggac aaatctttat tccatgttta 2880
atatttttag ctttccctgt agctaattat tcatgctgaa cacattttta atgctgtaa 2940
tgtagataat gtaatttatg tatcattaat gcctctttag tagtttagag aaaacgtcaa 3000
aagaaatggc ccagaataa gcttcttgat ttgtaaaatt ctatgtcatt ggctcaaat 3060
tgtatagtat ctcaaatat aatatatag acatctcaga taatatattt gaaatagcaa 3120
attcctgtta gaapataata gtacttaact agatgagaat aacaggctgc cattatttga 3180
attgtctcct attcgttttt catttgtgtt gttactcatg tttacttat ggggggatag 3240
atataacttc cgctgttttc agaagtattg tatgcagtca gtatgagaat gcaatttaag 3300
tttcttgat gctttttcac acttctatta ctagaataa gaatacagta atattggcaa 3360
agaaaattga ccagttcaat aaaatttttt agtaaactg attgaaaata aaaaaaaaaa 3420
aaaaaaaaaa aaaa 3434

Met Asp Gly His Thr Asp Ile Trp Arg Asn His Met Asp Thr Pro Pro
5 10 15

His Tyr His Arg Asp Thr Asp Thr Arg Arg His His His Met Asp Thr
20 25 30

Leu Ser His Tyr His Arg Asp Thr Arg His His Thr Val Thr Trp Thr
35 40 45

His His His Thr His Glu His Thr Asp Thr Leu Pro Tyr Gly His Trp
50 55 60

His Thr His Cys His Thr Val Thr Trp Thr His Leu His Thr Ile Thr
65 70 75 80

Pro Pro His Thr Leu Pro Val Asp Thr Arg Thr His Arg His Cys His
85 90 95

Thr Asp Thr Gln Asn Thr Val Thr Arg Arg His His His Ala Asp Thr
100 105 110

Pro Pro Leu Trp Cys Arg Leu Asn Tyr Pro Ala Gly Gly Thr Ala Val
115 120 125

Ala Tyr Ser Cys Leu Ser Asp Trp Leu Ser Pro Gln
130 135 140

<213> Homo sapiens

Met Tyr Arg His Thr Glu Thr Leu Pro His Gly Asp Thr Val Thr Gln
5 10 15

Ser His Gly His Thr Gly Ile Val Thr Trp Thr Asp Thr Gln Thr Tyr
20 25 30

Gly Glu Ile Thr Trp Thr His His His Thr Ile Thr Gly Thr Gln Thr
35 40 45

His Gly Asp Ile Thr Thr Trp Thr His Cys His Thr Thr Thr Gly Thr
50 55 60

Arg Asp Ile Thr Leu Ser His Gly His Thr Ile Thr His Met Asn Thr
65 70 75 80

Pro Thr His Cys His Met Asp Thr Gly Thr His Thr Ala Thr Leu Ser⁶
85 90 95

His Gly His Thr Ser Thr Pro Ser His His His Thr His Cys Leu Trp
100 105 110

Thr Gln Gly His Thr Asp Thr Val Thr Gln Ile His Lys Thr Leu Ser
115 120 125

His Gly Asp Ile Thr Met Gln Ile His His His Ser Gly Ala Val
130 135 140

<210> 479

<211> 222

<212> PRT

<213> Homo sapiens

<400> 479

Met Tyr Arg His Thr Glu Thr Leu Pro His Gly Asp Thr Val Thr Gln
5 10 15

Ser His Glu His Thr Gly Ile Val Thr Trp Thr Asp Thr Gln Thr Tyr
20 25 30

Gly Glu Ile Thr Leu Thr His His His Thr Ile Thr Gly Thr Gln Thr
35 40 45

His Gly Asp Ile Thr Thr Trp Thr His Cys His Thr Thr Thr Gly Thr
50 55 60

Arg Asp Ile Thr Leu Ser His Gly His Thr Ile Thr His Met Asn Thr
65 70 75 80

Pro Thr His Cys His Met Asp Thr Ala Thr His Thr Ala Thr Leu Ser
85 90 95

His Gly His Thr Ser Ile Pro Ser His His His Thr His Cys His Val
100 105 110

Asp Thr Arg Thr His Arg His Cys His Thr Asp Thr Gln Asn Thr Val
115 120 125

Thr Arg Arg His His His Ala Asp Thr Pro Pro His Gly His Ser Thr
130 135 140

Arg His Ser Ala Thr Gln Ile His His His Thr Glu Met Arg Thr His
145 150 155 160

Cys His Thr Asp Thr Thr Ser Leu Pro His Phe His Val Ser Ala
165 170 175

Gly Gly Val Gly Pro Thr Thr Leu Gly Ser Asn Arg Glu Ile Thr Trp
180 185 190

Thr Tyr Ser Glu Gly Lys Ile Phe Phe Tyr Phe Leu Gly Asn Gln Ala
195 200 205

Arg Leu Cys Leu Lys Lys Arg Lys Lys Lys Gln Tyr Thr Val
210 215 220

<400> 480
Met Glu Pro Tyr Arg Gly Asn Glu Gln Pro Ser Gln Glu Gln Gly Val
5 10 15
Cys Cys Leu Trp Gly Leu Gln Ser Leu Pro Gln Gly Ser Tyr Val Thr
20 25 30
Val Gly Phe Leu Val Val Lys Arg Gln Thr Ile Gly Arg Leu Glu Arg
35 40 45
Asp Phe Met Phe Lys Cys Arg Lys Gln Pro Gly Leu Pro Pro Ser Gly
50 55 60
Leu Cys Leu Leu Trp Pro Trp Pro Asn Leu Glu Phe Gly Arg Arg Gln
65 70 75 80
Asp Arg Leu Thr Trp Ser Ser Val Ser Val Ala Gly Val Cys Ala Cys
85 90 95
Arg Ala Arg Pro Gly Trp Leu Gly Glu Gln Pro Ala Thr Ser Ala Gly
100 105 110
Val Arg Leu Glu Gln Val Glu Gln Pro Pro Ala His Pro Leu Gln Glu
115 120 125
Ala Gly Val Ala Arg Phe Pro Arg Pro Glu Trp Val Pro Pro Asn Gly
130 135 140

```
<210> 481
<211> 167
<212> PRT
<213> Homo sapiens
```

<400> 481
Met His Gly Pro Gln Val Leu Ala Arg Cys Ser Glu Cys Ala Cys Pro
5 10 15
Ala Leu Ala Ala Thr Ser Ala Gly Val Arg Leu Glu Gly Val Asp Arg
20 25 30
Pro Pro Thr Leu Pro Ser Gln Gly Ser Gly Trp Pro Cys Ser His Ser
35 40 45
Leu Ser Gly Cys His Leu Met Ala Asp Gly Ala Lys Ala Leu Gly Lys
50 55 60
Ala Asp Gly Pro Trp Pro Tyr Leu Phe Val Arg Arg Thr Asp Val Pro

65 70 75 80
 Cys Pro Ala Ala Ser Glu Val Gly Gly Cys Ala Pro Ser Ser Trp Arg
 85 90 95
 Ala Leu Ala Glu Val Thr Gly Cys Ser Leu Gly Pro Leu Gly Leu Ala
 100 105 110
 Gln His Ala Gln Ala Ser Val Leu Leu Cys Tyr Lys Trp Ser His
 115 120 125
 Ile Gly Glu Thr Ser Ser His Leu Arg Ser Lys Val Tyr Ala Ala Phe
 130 135 140
 Gly Gly Ser Ser Pro Cys Leu Lys Gly Leu Met Ser Leu Trp Ala Ser
 145 150 155 160
 Trp Leu Ser Arg Gly Arg Pro
 165

<210> 482

<211> 143

<212> PRT

<213> Homo sapiens

<400> 482

Met Glu Pro Tyr Arg Gly Asn Lys Lys Gln Val Gln Glu Lys Gly Val
 5 10 15
 Pro Cys Leu Trp Gly Ser Ser Pro Cys Leu Arg Cys His Met Ala Leu
 20 25 30
 Arg Ala Ser Trp Leu Pro Gly Gly Gly Pro Gln Ala Ile Leu Gly Arg
 35 40 45
 Thr Leu Cys Ser Ser Ala Glu Ser Ser Gln Asp Cys His Pro Gly Gly
 50 55 60
 Pro Ser Ile Ala Leu Ala Lys Pro Cys Arg Gly Val Trp Leu Leu Phe
 65 70 75 80
 Glu Pro Ala Trp Pro Pro Trp His Ala Arg Ala Pro Gly Ala Gly Thr
 85 90 95
 Leu Leu Arg Val Cys Leu Ser Cys Leu Gly Cys His Leu Cys Gly Gly
 100 105 110
 Ala Ser Gly Gly Gly Gly Pro Ala Thr Asn Leu Thr Gln Ser Arg Lys
 115 120 125
 Trp Met Ala Met Phe Pro Gln Pro Glu Trp Leu Pro Pro Asp Gly
 130 135 140

<210> 483

<211> 143

<212> PRT

<213> Homo sapiens

<400> 483

<400> 483
Met Glu Thr Gln Arg Gly Asn Lys Gln Arg Ala Gln Glu Gln Gly Val
5 10 15
Cys Cys Leu Trp Gly Ser Ser Pro Cys Leu Gly Ser Tyr Gly Thr Ala
20 25 30
Gly Phe Leu Val Ala Lys Arg Arg Thr Thr Gly Leu Leu Glu Glu Asp
35 40 45
Phe Thr Phe Lys Cys Arg Lys Gln Pro Lys Leu Pro Ser Met Arg Leu
50 55 60
Ser Leu Leu Trp Pro Trp Arg Asp Leu Lys Phe Val Pro Arg Gln Asp
65 70 75 80
Lys Leu Thr Arg Ser Ser Val Ser Val Ala Gly Ala Tyr Ala Cys Arg
85 90 95
Ala Gly Pro Gly Trp Leu Lys Glu Gln Pro Ala Thr Ser Ala Arg Val
100 105 110
Arg Leu Val Gln Ala Glu His Pro Pro Pro His Pro Leu Glu Glu Val
115 120 125
Gly Met Ala Arg Phe Pro Gln Pro Glu Cys Leu Pro Pro Tyr Cys
130 135 140

<210> 484

<211> 30

<212> PRT

<213> Homo Sapien

<400> 484

<400> 484
 Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly Phe
 1 5 10 15
 Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile
 20 25 30

<210> 485

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 485

gggaagctta tcacctatgt gccgcctctg c

31

<210> 486

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 486

gcgaattctc acgctgagta tttggcc

27

<210> 487

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 487

cccgaattct tagctgcccc tccgaacgcc ttcac

36

<210> 488

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 488

gggaagcttc ttccccggct gcaccagctg tgc

33

<210> 489

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 489

Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala
1 5 10 15
Ser Val Ala

<210> 490

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 490

Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys
1 5 10 15
Leu Ser His Ser
20

<210> 491

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 491

Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
1 5 10 15
Thr Gly Phe Thr
20

<210> 492

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 492

Ala Leu Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr
1 5 10 15
Leu Ala Ser Leu
20

<210> 493

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 493

Tyr Thr Leu Ala Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro
1 5 10 15
Lys Tyr Arg Gly
20

<210> 494

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 494

Leu Pro Lys Tyr Arg Gly Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser
1 5 10 15
Leu Met Ile Ser
20

<210> 495

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 495

Asp Ser Leu Met Thr Ser Phe Leu Pro Gly Pro Lys Pro Gly Ala Pro
1 5 10 15
Phe Pro Asn Gly
20

<210> 496

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 496

Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly Ser Gly Leu Leu
1 5 10 15
Pro Pro Pro Pro Ala
20

<210> 497

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 497

Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys Asp Val
1 5 10 15
Ser Val Arg Val
20

<210> 498

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 498

Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala Arg Val
1 5 10 15
Val Pro Gly Arg
20

<210> 499

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 499

Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 1 5 10 15
 Ser Ala Phe Leu
 20

<210> 500

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 500

Leu Asp Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met
 1 5 10 15
 Gly Ser Ile Val
 20

<210> 501

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 501

Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met
 1 5 10 15
 Val Ser Ala Ala
 20

<210> 502

<211> 414

<212> DNA

<213> Homo Sapien

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 502

caccatggag	acaggcctgc	gctggctttt	cctggctcgt	gtgctcaaag	gtgtccaatg	60
tcagtcggtg	gaggagtccg	ggggtcgcct	ggtcacgcct	gggacacctt	tgacantcac	120
ctgtagagtt	tttgaatng	acctcagtag	caatgcaatg	agctgggtcc	gccaggctcc	180
aggggaagggg	ctggaatgga	tccggagccat	tgataattgt	ccacantacg	cgacctgggc	240
gaaaggccga	ttnatnattt	ccaaaacctn	gaccacggtg	gatttgaaaa	tgaccagtcc	300
gacaaccgag	gacacggcca	cctatttttg	tggcagaatg	aatactggta	atagtggttg	360
gaagaatatt	tggggcccag	gcaccctggt	caccgtntcc	tcagggaac	ctaa	414

<210> 503

<211> 379

<212> DNA

<213> Homo Sapiens

<220>

<221> misc_feature

<222> (1)...(379)

<223> n = A,T,C or G

<400> 503

atnccgatgggt gcttgggtcaa aggtgtccag tgcagtcgg tggaggagtc cggggggtcgc	60
ctggtcacgc ctgggacacc cctgacactc acctgcaccg tntctggatt ngacatcagt	120
agctatggag tgagctgggt ccgccaggct ccagggaagg ggctggnata catcggtatca	180
ttagtagtag tggtagattt tacgcgagct gggcgaaagg ccgattcacc atttccaaaa	240
cctngaccac ggtggatttg aaaatcacca gtttgacaac cgaggacacg gccacctatt	300
tntgtgccag aggggggttt aattataaag acatttgggg cccaggcacc ctggtcaccg	360
tntccttagg gcaacctaa	379

<210> 504

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 504

Gly	Phe	Thr	Asn	Tyr	Thr	Asp	Phe	Glu	Asp	Ser	Pro	Tyr	Phe	Lys	Glu
1			5					10					15		
Asn	Ser	Ala													

<210> 505

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 505

Lys	Glu	Asn	Ser	Ala	Phe	Pro	Pro	Phe	Cys	Cys	Asn	Asp	Asn	Val	Thr
1				5				10					15		
Asn	Thr	Ala	Asn												
				20											

<210> 506

<211> 407

<212> DNA

<213> Homo Sapien

<400> 506

atggagacag gcctgcgctg gcttctcctg gtcgctgcgc tcaaagggtg ccagtgtcag	60
tcgctggagg agtcggggg tcgctgggtc acgcctggga caccctgac actcacctgc	120
accgtctctg gattctccct cagtagcaat gcaatgatct gggtcgcgca ggctccaggg	180
aaggggctgg aatacatcgg atacattagt tatgggtgta gcgcatacta cgcgagctgg	240
gtgaaaggcc gattcaccat ctccaaaacc tcgaccacgg tggatctgag aatgaccagt	300
ctgacaaccg aggacacggc cacctatttc tgtgccagaa atagtgattt tagtgggtatg	360
ttgtggggcc caggcaccct ggtcacgcgc tcttcagggc aacctaa	407

<210> 507
 <211> 422
 <212> DNA
 <213> Homo Sapien

<400> 507
 atggagacag gcctgcgctg gcttctcctg gtcgctgtgc tcaaaggtgt ccagtgtcag 60
 tcggtggagg agtccggggg tcgctgtgac acgctggga caccctgac actcacctgt 120
 acagtctctg gattctccct cagcaactac gacctgaact gggtccgcca ggctccaggg 180
 aaggggctgg aatggatcgg gatcattaat tatgttggtg ggacgggacta cgcgaactgg 240
 gcaaaaggcc gggtcaccat ctccaaaacc tcgaccaccg tggatctcaa gatcgccagt 300
 cgcacaaccg aggacacggc cacctatttc tgtgccagag ggtggaagtg cgatgagtct 360
 ggtccgtgct tgcgcctctg gggcccaggc accctgggtc ccgtctcctt agggcaacct 420
 aa 422

<210> 508
 <211> 411
 <212> DNA
 <213> Homo Sapiens

<220>
 <221> misc_feature
 <222> (1)...(411)
 <223> n = A,T,C or G

<400> 508
 atggagacag gcctgcgctg cttctcctgg tcgctgtgct caaaggtgtc cagtgtcagt 60
 cgggtggagg gtccgggggt cgctgtgtca cgctgggac accctgaca ctcacctgca 120
 cagtctctgg aatcgacctc agtagctact gcatgagctg gggtccgcca gctccagggg 180
 aggggctgga atggatcgga atcattggta ctctgggtga cacatactac gcgaggtggg 240
 cgaaaggccg attcaccatc tccaaaacct cgaccacggt gcatntgaaa atcnccagtc 300
 cgacaaccga ggacacggcc acctatttct gtgccagaga tcttcgggat ggtagtagta 360
 ctggttatta taaaatctgg ggcccaggca ccttggtcac cgtctccttg g 411

<210> 509
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 509
 Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 1 5 10 15

<210> 510
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 510
 Pro Glu Tyr Asn Arg Pro Leu Leu Ala Asn Asp Leu Met Leu Ile
 1 5 10 15

<210> 511
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 511

Tyr His Pro Ser Met Phe Cys Ala Gly Gly Gly Gln Asp Gln Lys
 1 5 10 15

<210> 512
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 512

Asp Ser Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu
 1 5 10 15

<210> 513
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 513

Ala Pro Cys Gly Gln Val Gly Val Pro Asx Val Tyr Thr Asn Leu
 1 5 10 15

<210> 514
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 514

Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 1 5 10 15

<210> 515
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 515

Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg
1 5 10 15

<210> 516

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 516

Val Ser Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln
1 5 10 15

<210> 517

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 517

Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met
1 5 10 15

<210> 518

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 518

Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
1 5 10 15

<210> 519

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 519

Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg Asn Tyr Asp Glu Gly Cys
1 5 10 15
Gly

<210> 520

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 520

Val	Gly	Glu	Gly	Leu	Tyr	Gln	Gly	Val	Pro	Arg	Ala	Glu	Pro	Gly	Thr
1				5				10						15	
Glu	Ala	Arg	Arg	His	Tyr	Asp	Glu	Gly							
			20				25								

<210> 521

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 521

Ala	Pro	Phe	Pro	Asn	Gly	His	Val	Gly	Ala	Gly	Gly	Ser	Gly	Leu	Leu
1				5				10						15	
Pro	Pro	Pro	Pro	Ala											
				20											

<210> 522

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 522

Leu	Leu	Val	Val	Pro	Ala	Ile	Lys	Lys	Asp	Tyr	Gly	Ser	Gln	Glu	Asp
1				5					10					15	
Phe	Thr	Gln	Val												
			20												

<210> 523

<211> 254

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<220>

<221> VARIANT

<222> (1)...(254)

<223> Xaa = any amino acid

<400> 523

Met	Ala	Thr	Ala	Gly	Asn	Pro	Trp	Gly	Trp	Phe	Leu	Gly	Tyr	Leu	Ile
1				5				10						15	
Leu	Gly	Val	Ala	Gly	Ser	Leu	Val	Ser	Gly	Ser	Cys	Ser	Gln	Ile	Ile
			20				25					30			
Asn	Gly	Glu	Asp	Cys	Ser	Pro	His	Ser	Gln	Pro	Trp	Gln	Ala	Ala	Leu
			35				40					45			

Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln
 50 55 60
 Trp Val Leu Ser Ala Thr His Cys Phe Gln Asn Ser Tyr Thr Ile Gly
 65 70 75 80
 Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met
 85 90 95
 Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu
 100 105 110
 Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu
 115 120 125
 Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala
 130 135 140
 Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg
 145 150 155 160
 Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu
 165 170 175
 Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys
 180 185 190
 Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser Gly
 195 200 205
 Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly
 210 215 220
 Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu
 225 230 235 240
 Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 245 250

<210> 524
 <211> 765
 <212> DNA
 <213> Homo sapien

<400> 524
 atggccacag caggaaatcc ctggggctgg ttcctggggt acctcattct tgggtgtcgca 60
 ggatcgctcg tctctggtag ctgcagccaa atcataaacg gcgaggactg cagcccgcac 120
 tcgcagccct ggcaggcggc actgggtcatg gaaaacgaat tggtctgctc gggcgctctg 180
 gtgcaccgc agtgggtgct gtcagccgca cactgtttcc agaactccta caccatcggg 240
 ctgggctgac acagtcttga ggccgaccaa gagccaggga gccagatggg ggaggccagc 300
 ctctccgtac ggcacccaga gtacaacaga ccctgtctcg ctaacgacct catgtctatc 360
 aagttggacg aatccgtgtc cgagtctgac accatccgga gcacagcat tgcttcgcag 420
 tgccctaccg cggggaactc ttgcctcggt tctggctggg gtctgtggc gaacggcaga 480
 atgcctaccg tgctgcagtg cgtgaacgtg tcggtggtgt ctgaggaggt ctgcagtaag 540
 ctctatgacc cgctgtacca cccagcatg ttctgcgccc gcggagggca agaccagaag 600
 gactctgca acggtgactc tggggggccc ctgatctgca acgggtactt gcagggcctt 660
 gtgtctttcg gaaaagcccc gtgtggccaa gttggcgtgc caggtgtcta caccaacctc 720
 tgcaaatca ctgagtggat agagaaaacc gtccaggcca gttaa 765

<210> 525
 <211> 254
 <212> PRT
 <213> Homo sapien

<400> 525
 Met Ala Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile
 1 5 10 15
 Leu Gly Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile
 20 25 30
 Asn Gly Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu

```

      35              40              45
Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln
      50              55              60
Trp Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly
      65              70              75              80
Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met
      85              90              95
Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu
      100             105             110
Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu
      115             120             125
Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala
      130             135             140
Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg
      145             150             155             160
Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu
      165             170             175
Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys
      180             185             190
Ala Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly
      195             200             205
Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly
      210             215             220
Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu
      225             230             235             240
Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
      245             250

```

<210> 526

<211> 963

<212> DNA

<213> Homo sapiens

<400> 526

```

atgagttcct gcaacttcac acatgccacc tttgtgctta ttggtatccc aggattagag 60
aaagcccatt tctgggttgg cttccccctc ctttccatgt atgtagtggc aatgttttga 120
aactgcatcg tgggtcttcat cgtaaggacg gaacgcagcc tgcacgctcc gatgtacctc 180
tttctctgca tgcttgacgc cattgacctg gccttatcca catccaccat gcctaagatc 240
cttgcccttt tctgggttga ttcccgagag attagctttg aggcctgtct taccagatg 300
ttctttatcc atgccctctc agccattgaa tccaccatcc tgctggccat gccctttgac 360
cgttatgtgg ccatctgcca cccactgcgc catgctgcag tgctcaacaa tacagtaaca 420
gcccagattg gcatcgtggc tgtgggtcgc ggatccctct tttttttccc actgcctctg 480
ctgatcaagc ggctggcctt ctgccactcc aatgtcctct cgcactccta ttgtgtccac 540
caggatgtaa tgaagtggc ctatgcagac actttgccc aatgtgtata tggctttact 600
gccattctgc tgggtcatggg cgtggacgta atgttcatct ccttgctcta ttttctgata 660
atacgaacgg ttctgcaact gccttccaag tcagagcggg ccaaggcctt tggaaacctgt 720
gtgtcacaca ttggtgtggt actgccttc tatgtgccac ttattggcct ctcagtgtga 780
caccgctttg gaaacagcct tcatccatt gtgcgtgttg tcatgggtga catctacctg 840
ctgctgcctc ctgtcatcaa tccatcatc tatgggtgcca aaaccaaaca gatcagaaca 900
cgggtgctgg ctatgttcaa gatcagctgt gacaaggact tgcaggctgt gggaggcaag 960
tga

```

<210> 527

<211> 320

<212> PRT

<213> Homo sapiens

<400> 527

Met Ser Ser Cys Asn Phe Thr His Ala Thr Phe Val Leu Ile Gly Ile
5 10 15

Pro Gly Leu Glu Lys Ala His Phe Trp Val Gly Phe Pro Leu Leu Ser
20 25 30

Met Tyr Val Val Ala Met Phe Gly Asn Cys Ile Val Val Phe Ile Val
35 40 45

Arg Thr Glu Arg Ser Leu His Ala Pro Met Tyr Leu Phe Leu Cys Met
50 55 60

Leu Ala Ala Ile Asp Leu Ala Leu Ser Thr Ser Thr Met Pro Lys Ile
65 70 75 80

Leu Ala Leu Phe Trp Phe Asp Ser Arg Glu Ile Ser Phe Glu Ala Cys
85 90 95

Leu Thr Gln Met Phe Phe Ile His Ala Leu Ser Ala Ile Glu Ser Thr
100 105 110

Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro
115 120 125

Leu Arg His Ala Ala Val Leu Asn Asn Thr Val Thr Ala Gln Ile Gly
130 135 140

Ile Val Ala Val Val Arg Gly Ser Leu Phe Phe Phe Pro Leu Pro Leu
145 150 155 160

Leu Ile Lys Arg Leu Ala Phe Cys His Ser Asn Val Leu Ser His Ser
165 170 175

Tyr Cys Val His Gln Asp Val Met Lys Leu Ala Tyr Ala Asp Thr Leu
180 185 190

Pro Asn Val Val Tyr Gly Leu Thr Ala Ile Leu Leu Val Met Gly Val
195 200 205

Asp Val Met Phe Ile Ser Leu Ser Tyr Phe Leu Ile Ile Arg Thr Val
210 215 220

Leu Gln Leu Pro Ser Lys Ser Glu Arg Ala Lys Ala Phe Gly Thr Cys
225 230 235 240

Val Ser His Ile Gly Val Val Leu Ala Phe Tyr Val Pro Leu Ile Gly
245 250 255

Leu Ser Val Val His Arg Phe Gly Asn Ser Leu His Pro Ile Val Arg
260 265 270

Val Val Met Gly Asp Ile Tyr Leu Leu Leu Pro Pro Val Ile Asn Pro
275 280 285

Ile Ile Tyr Gly Ala Lys Thr Lys Gln Ile Arg Thr Arg Val Leu Ala
290 295 300

Met Phe Lys Ile Ser Cys Asp Lys Asp Leu Gln Ala Val Gly Gly Lys

305

310

315

320

<210> 528
<211> 20
<212> DNA
<213> Homo Sapien

<400> 528
actatgggtcc agaggctgtg

20

<210> 529
<211> 20
<212> DNA
<213> Homo Sapien

<400> 529
atcacctatg tgccgcctct

20

<210> 530
<211> 1852
<212> DNA
<213> Homo sapiens

<400> 530

ggcacgagaa ttaaaaccct cagcaaaaaca ggcatagaag ggacatacct taaagtaata 60
aaaaccacct atgacaagcc cacagccaac ataatactaa atggggaaaaa gttagaagca 120
tttctctga gaactgcaac aataaataca aggatgctgg attttgtcaa atgccttttc 180
tgtgtctgtt gagatgctta tgtgactttg cttttaattc tgtttatgtg attatcacat 240
ttattgactt gcctgtgtta gaccggaaga gctggggtgt ttctcaggag ccaccgtgtg 300
ctgcccgcagc ttccgggataa cttgaggctg catcactggg gaagaaacac aytccgtgcc 360
gtggcgctga tggctgagga cagagcttca gtgtggcttc tctgcgactg gcttcttcgg 420
ggagttcttc cttcatagtt catccatag gctccagagg aaaattatat tattttgtta 480
tggatgaaga gtattacgtt gtgcagatat actgcagtgt cttcatctct tgatgtgtga 540
ttgggtaggt tccaccatgt tgccgcagat gacatgattt cagtacctgt gtctggctga 600
aaagtgtttg tttgtgaatg gatattgtgg tttctggatc tcatcctctg tgggtggaca 660
gctttctcca ccttgctgga agtgacctgc tgtccagaag tttgatggct gaggagtata 720
ccatcgtagc tgcattcttc atttctgca tttcttctc cctggatgga cagggggagc 780
ggcaagagca acgtgggcac ttctggagac cacaacgact cctctgtgaa gacgcttggg 840
agcaagaggt gcaagtgggt ctgccactgc tttccctgct gcagggggag cggaagagc 900
aacgtggctg cttggggaga ctacgatgac agcgccttca tggatcccag gtaccacgtc 960
catggagaag atctggacaa gctccacaga gctgcctggt ggggtaaaagt cccagaaaag 1020
gatctcatcg tcatgctcag ggacacggat gtgaacaaga gggacaagca aaagaggact 1080
gctctacatc tggcctctgc caatgggaat tcagaagtag taaaactcgt gctggacaga 1140
cgatgtcaac ttaatgtcct tgacaacaaa aagaggacag ctctgacaaa ggccgtacaa 1200
tgccaggaag atgaatgtgc gttaatgttg ctggaacatg gcactgatcc aaatattcca 1260
gatgagtatg gaaataccac tctacactat gctgtctaca atgaagataa attaattggc 1320
aaagcactgc tcttatacgg tgctgatatc gaatcaaaaa acaagcatgg cctcacacca 1380
ctgctacttg gtatacatga gcaaaaaacag caagtgggtg aatttttaac caagaaaaaa 1440
gcgaatttaa atgcgctgga tagatatgga agaactgctc tcataactgc tgtatgttgt 1500
ggatcagcaa gtatagtcag ccctctactt gagcaaaatg ttgatgtatc ttctcaagat 1560
ctggaaagac ggccagagag tatgctgttt ctagtcatca tcatgtaatt tgccagttac 1620
tttctgacta caaagaaaaa cagatgttaa aaatctcttc tgaaaacagc aatccagaac 1680
aagacttaaa gctgacatca gaggaagagt cacaaggct taaaggaagt gaaaacagcc 1740
agccagagct agaagattta tggctattga agaagaatga agaacacgga agtactcatg 1800
tgggattccc agaaaacctg actaacgggtg ccgctgctgg caatgggtgat ga 1852

<210> 531

<211> 879

<212> DNA

<213> Homo sapiens

<400> 531

```

atgcatcttt catttctgc atttcttct ccctggatgg acagggggag cggcaagagc 60
aacgtgggca cttctggaga ccacaacgac tcctctgtga agacgcttgg gagcaagagg 120
tgcaagtggg gctgccactg cttccctctg tcagggggga gcggcaagag caacgtgggtc 180
gcttggggag actacgatga cagcgcttct atggatccca ggtaccacgt ccatggagaa 240
gatctggaca agctccacag agctgcctgg tggggtaaag tcccagaaa ggatctcatc 300
gtcatgtca gggacacgga tgtgaacaag agggacaagc aaaagaggac tgctctacat 360
ctggcctctg ccaatgggaa ttcagaagta gtaaaactcg tgctggacag acgatgtcaa 420
cttaatgtcc ttgacaacaa aaagaggaca gctctgacaa aggccgtaca atgccaggaa 480
gatgaatgtg cgtaaatgtt gctggaacat ggcactgatc caaatattcc agatgagtat 540
ggaaatacca ctctacacta tgctgtctac aatgaagata aattaatggc caaagcactg 600
ctcttatacg gtgctgatat cgaatcaaaa aacaagcatg gcctcacacc actgctactt 660
ggtatacatg agcaaaaaca gcaagtgggt aaatttttaa tcaagaaaaa agcgaattta 720
aatgcgctgg atagatatgg aagaactgct ctcatacttg ctgtatgttg tggatagca 780
agtatagtca gccctctact tgagcaaaat gttgatgtat cttctcaaga tctggaaaga 840
cggccagaga gtatgctgtt tctagtcac atcatgtaa 879

```

<210> 532

<211> 292

<212> PRT

<213> Homo sapiens

<400> 532

```

Met His Leu Ser Phe Pro Ala Phe Leu Pro Pro Trp Met Asp Arg Gly
          5                      10                      15

Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp His Asn Asp Ser Ser
          20                      25                      30

Val Lys Thr Leu Gly Ser Lys Arg Cys Lys Trp Cys Cys His Cys Phe
          35                      40                      45

Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val Val Ala Trp Gly Asp
          50                      55                      60

Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr His Val His Gly Glu
          65                      70                      75                      80

Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg
          85                      90                      95

Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Arg Asp
          100                     105                     110

Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser
          115                     120                     125

Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys Gln Leu Asn Val Leu
          130                     135                     140

Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala Val Gln Cys Gln Glu
          145                     150                     155                     160

Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile
          165                     170                     175

```


Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Val Tyr Asn Glu
 180 185 190

Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu
 195 200 205

Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Ile His Glu
 210 215 220

Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu
 225 230 235 240

Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys
 245 250 255

Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu Glu Gln Asn Val Asp
 260 265 270

Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu Ser Met Leu Phe Leu
 275 280 285

Val Ile Ile Met
 290

<210> 533
 <211> 801
 <212> DNA
 <213> Homo sapiens

<400> 533
 atgtacaagc ttcagtgc aaactgtgct acaaattggag ccacagagag gaaacaagca 60
 gcaggctcag gagcagggtg tgcgctgcct tcggctctcc aatccatgcc tcagggtctcc 120
 tatgccactg cagcattctt gggtgccaag aggccaaacca caggccatct tgagaaggag 180
 tttatgttcc actgcagaaa gcagccagga tcaccatcca ggggacttgg tcttctgtgg 240
 ccctggccag acatagaatt tgtgccaagg caggacaagc tactcagag cagcgtgtta 300
 gtacctcaaa tctgtgcgtg ccagacaagg ccaaactggc tcaatgagca accagccacc 360
 tctgcagggg tgcgtctgga ggaggtggac cagccaccaa ccttaccag tcaaggaagt 420
 ggatggccat gttcccacag cctgagtggc tgccacctga tggctgatat agcaaaggcc 480
 ttaggaaaag cagatggccc ttggccctac ctttttgta gaagaactga tgttccatgt 540
 cctgcagcga gtgaggttgg tggctgtgcc ccagctcct ggacaccct cgcagagggtg 600
 actggttgc ttttgagccc tcttagcctt gccagcatg cacaagcctc agtgctacta 660
 ctgtgctaca aatggagcca tataggggaa acgagcagcc atctcaggag caaggtgtat 720
 gctgcctttg ggggctccag tccttgctc aagggtctta tgtcactgtg ggcttcttgg 780
 ttgccaagag gcagaccata g 801

<210> 534
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 534
 Met Tyr Lys Leu Gln Cys Asn Asn Cys Ala Thr Asn Gly Ala Thr Glu
 5 10 15

Arg Lys Gln Ala Ala Gly Ser Gly Ala Gly Tyr Ala Leu Pro Ser Ala
 20 25 30

Leu Gln Ser Met Pro Gln Gly Ser Tyr Ala Thr Ala Arg Phe Leu Val
 35 40 45
 Ala Lys Arg Pro Thr Thr Gly His Leu Glu Lys Glu Phe Met Phe His
 50 55 60
 Cys Arg Lys Gln Pro Gly Ser Pro Ser Arg Gly Leu Gly Leu Leu Trp
 65 70 75 80
 Pro Trp Pro Asp Ile Glu Phe Val Pro Arg Gln Asp Lys Leu Thr Gln
 85 90 95
 Ser Ser Val Leu Val Pro Gln Ile Cys Ala Cys Gln Thr Arg Pro Asn
 100 105 110
 Trp Leu Asn Glu Gln Pro Ala Thr Ser Ala Gly Val Arg Leu Glu Glu
 115 120 125
 Val Asp Gln Pro Pro Thr Leu Pro Ser Gln Gly Ser Gly Trp Pro Cys
 130 135 140
 Ser His Ser Leu Ser Gly Cys His Leu Met Ala Asp Ile Ala Lys Ala
 145 150 155 160
 Leu Gly Lys Ala Asp Gly Pro Trp Pro Tyr Leu Phe Val Arg Arg Thr
 165 170 175
 Asp Val Pro Cys Pro Ala Ala Ser Glu Val Gly Gly Cys Ala Pro Ser
 180 185 190
 Ser Trp His Thr Leu Ala Glu Val Thr Gly Cys Ser Leu Ser Pro Leu
 195 200 205
 Ser Leu Ala Gln His Ala Gln Ala Ser Val Leu Leu Leu Cys Tyr Lys
 210 215 220
 Trp Ser His Ile Gly Glu Thr Ser Ser His Leu Arg Ser Lys Val Tyr
 225 230 235 240
 Ala Ala Phe Gly Gly Ser Ser Pro Cys Leu Lys Gly Leu Met Ser Leu
 245 250 255
 Trp Ala Ser Trp Leu Pro Arg Gly Arg Pro
 260 265

<210> 535

<211> 6082

<212> DNA

<213> Homo sapiens

<400> 535

cctccactat tacagcttat aggaattac aatccacttt acaggcctca aaggttcatt 60
 ctggccgagc ggacaggcgt ggcggccgga gccccagcat ccttgcttga ggtccaggag 120
 cggagcccgcc ggccactgcc ggcctgatcag cgcgaccccg gcccgcgccc gccccgccc 180
 gcaagatgct gcccggtgtac caggaggtga agcccaacc gctgcaggac gccaacctct 240
 gctcacgcgt gttcttctgg tggctcaatc ccttggttaa aattggccat aaacggagat 300

tagaggaaga tgatatgtat tcagtgtctgc cagaagaccg ctcacagcac cttggagagg 360
agttgcaagg gttctgggat aaagaagttt taagagctga gaatgacgca cagaagcctt 420
ctttaacaag agcaatcata aagtgttact ggaaatctta tttagttttg ggaattttta 480
cgtaattga ggaaagtgcc aaagtaatcc agcccatatt tttgggaaaa attattaatt 540
attttgaaaa ttatgatccc atggattctg tggctttgaa cacagcgtac gcctatgcc 600
cgggtgtgac tttttgcacg ctcaattttg ctatactgca tcacttatat ttttatcacg 660
ttcagtgtgc tgggatgagg ttacgagtag ccatgtgcc 720
ttcgtcttag taacatggcc atggggaaga caaccacagg ccagatagtc aatctgctgt 780
ccaatgatgt gaacaagttt gatcagggtga cagtgttctt acacttcttg tgggcaggac 840
cactgcaggc gatcgagtg actgccctac tctggatgga gataggaata tctgtccttg 900
ctgggatggc agttctaatac atttctctgc ccttgcaaaag ctgttttggg aagtgttct 960
catcactgag gagtaaaact gcaactttca cggatgccag gatcaggacc atgaatgaag 1020
ttataactgg tataaggata ataaaaatgt acgctggga aaagtcattt tcaaatctta 1080
ttaccaattt gagaaagaag gagatttcca agattctgag aagttctctg ctcaggggga 1140
tgaatttggc ttcgtttttc agtgcaagca aaatcatcgt gtttgtgacc ttcaccacct 1200
acgtgtctct cggcagtggt atcacagcca gccgcgtgtt cgtggcagtg acgtgtatg 1260
gggctgtgag gctgacggtt accctcttct tcccctcagc cattgagagg gtgtcagagg 1320
caatcgtcag catccgaaga atccagacct ttttgcact tgatgagata tcacagcgca 1380
accgtcagct gccgtcagat ggtaaaaaga tgggtcatgt gcaggatttt actgctttt 1440
gggataaggc atcagagacc ccaactctac aaggccttct cttactgtc agacctggcg 1500
aattgttagc tgtggtcggc cccgtgggag cagggaagtc atcactgtta agtgcgtg 1560
tcggggaatt ggcccaagt cacgggctgg tcagcgtgca tggagaatt gcctatgtgt 1620
ctcagcagcc ctgggtgttc tcgggaactc tgaggagtaa tttttattt gggagaat 1680
acgaaaagga acgatatgaa aaagtcataa aggcttgtgc tctgaaaaag gatttacagc 1740
tgttggagga tgggtgatctg actgtgatag gagatcgggg aaccacgctg agtggagggg 1800
agaaagcacg ggtaaacctt gcaagagcag tgtatcaaga tgctgacatc tatctctctg 1860
acgatcctct cagtgcagta gatgcggaag ttagcagaca cttgttcgaa ctgtgtattt 1920
gtcaaatttt gcatgagaag atcacaattt tagtgactca tcagttgcag tacctcaaag 1980
ctgcaagtca gattctgata ttgaaagatg gtaaaatggg gcagaagggg acttacactg 2040
agttcctaaa atctgtgata gattttggct cctttttaa gaaggataat gaggaaagt 2100
aacaacctcc agttccagga actccacac taaggaatcg taccttctca gagtctcgg 2160
tttgggtctc acaatcttct agacctctc tgaagatgg tgctctggag agccaagata 2220
cagagaatgt cccagttaca ctatcagagc agaaccgttc tgaaggaaaa gttggtttct 2280
aggcctataa gaattacttc agagctggtg ctactggat tgtcttcatt ttccttattc 2340
tctaaacac tgcagctcag gttgctatg tgcttcaaga ttggtggctt tcatactggg 2400
caaacaaca aagtatgcta aatgtcactg taaatggagg aggaatgta accgagaagc 2460
tagatcttaa ctggtactta ggaatttatt caggtttaac tgtagctacc gttctttttg 2520
gcatagcaag atctctattg gtattctacg tcttgttaa ctcttcacaa actttgcaca 2580
acaaaatggt tgagtcaatt ctgaaagctc cgggtattt ctttgataga aatccaatag 2640
gaagaatttt agatcgttt tccaaagaca ttggacactt ggatgattg ctgcccgtga 2700
cgtttttaga tttcatccag acattgctac aagtgttgg tgtggtctct gtggtctgg 2760
ccgtgatcc ttggatcgca atacccttg tccccttg aatcatttct atttttctt 2820
ggcgatattt tttgaaacg tcaagagatg tgaagcgct ggaatctaca actcggagtc 2880
cagtgtttt ccacttgta tcttctctcc aggggtctg gaccatccgg gcatacaaag 2940
cagaagagag gtgtcaggaa ctgtttgatg cacaccagga tttacattca gaggcttgg 3000
tcttggtttt gacaacgtcc cgtggttcg cgtccgtct ggatgccatc tgtgccatgt 3060
ttgtcatcat cgttgcctt gggtccctga tcttgcaaa aactctggat gccgggcagg 3120
ttggtttggc actgtcctat gccctcacgc tcatggggat gtttcagtgg tgtgttcgac 3180
aaagtgtga agttgagaat atgatgatc cagtagaaag ggtcattgaa tacacagacc 3240
ttgaaaaaga agcaccttg gaatatcaga aacgcccacc accagcctgg ccccatgaag 3300
gagtgataat ctttgacaat gtgaacttca tgtacagtc aggtgggct ctggtactga 3360
agcatctgac agcactcatt aaatcacaag aaaaggttg cattgtggga agaaccggag 3420
ctggaaaaag ttcctcact tcagccctt ttagattgtc agaaccgaa ggtaaaaatt 3480
ggattgataa gatcttgaca actgaaatg gacttcagca ttaagggaag aaaaagtcaa 3540
tcatacctca ggaacctgtt ttgttcactg gaacaatgag gaaaaacct gatcccttta 3600
atgagcacac ggatgaggaa ctgtggaatg ccttacaaga ggtacaactt aaagaaacca 3660
ttgaagatct tcttggtaaa atggatactg aattagcaga atcaggatcc aattttagtg 3720
ttggacaaa acaactgggt tgccttgcca gggcaattct caggaaaaat cagatattga 3780

```

ttattgatga agcgacggca aatgtggatc caagaactga tgagttaata caaaaaaat 3840
ccgggagaaa tttgccact gcaccgtgct aaccattgca cacagattga acaccattat 3900
tgacagcgac aagataatgg ttttagattc aggaagactg aaagaatatg atgagccgta 3960
tgttttgctg caaaataaag agagcctatt ttacaagatg gtgcaacaac tgggcaaggc 4020
agaagccgct gccctcactg aaacagcaaa acaggtatac ttcaaaagaa attatccaca 4080
tattggtcac actgaccaca tggttacaaa cacttccaat ggacagccct cgacctaac 4140
tattttcgag acagcactgt gaatccaaac aaaatgtcaa gtccgttccg aaggcatttg 4200
ccactagtgt ttggactatg taaaccacat tgtactttt tttactttgg caacaaatat 4260
ttatacatat aagatgctag ttcatttgaa tttttctccc aacttatcca aggatctcca 4320
gctctaacaa aatggtttat ttttatttaa atgtcaatag ttgtttttta aaatccaaat 4380
cagaggtgca ggccaccagt taaatgccgt ctatcagggt ttgtgcctta agagactaca 4440
gagtcaaagc tcatttttaa aggagttaga cagagttgtc acaggttttt gttgtgttt 4500
ttattgcccc caaaattaca tgttaatttc catttatac agggattcta tttacttgaa 4560
gactgtgaag ttgccatttt gtctcattgt tttcttgac ataactagga tccattattt 4620
cccctgaagg cttcttgtaa gaaaatagta cagttaaac caataggaa acaaaaaaga 4680
aaaagtttgt gacattgtag tagggagtgt gtaccctta ctccccatca aaaaaaaa 4740
tggatacatg gttaaaggat agaagggcaa tttttatca tatgttcta aagagaagga 4800
agagaaaata ctactttctc aaaatggaag cccttaaagg tgcttgata ctgaaggaca 4860
caaatgtgac cgtccatcct ccttttagagt tgcagtact ggacacggt actgttgag 4920
ttttagactc agcattgtga cacttcccaa gaaggccaaa cctctaaccg acattcctga 4980
aatacgtggc attattcttt tttggatttc tcatttatgg aaggctaacc ctctgttgac 5040
tgtaagcctt ttggtttggg ctgtattgaa atcctttcta aattgcatga ataggctctg 5100
ctaacgtgat gagacaaact gaaaattatt gcaagcattg actataatta tgcagtacgt 5160
tctcaggatg catccagggg ttcattttca tgagcctgtc caggttagtt tactcctgac 5220
cactaatagc attgtcattt gggctttctg ttgaatgaat caacaaacca caatacttcc 5280
tgggaccttt tgtactttat ttgaactatg agtctttaat ttttctgat gatggtggct 5340
gtaatatgtt gagttcagtt tactaaaggt tttactatta tggtttgaag tggagtctca 5400
tgacctctca gaataagggt tcacctcct gaaattgcat atatgtatat agacatgcac 5460
acgtgtgcat ttgtttgtat acatatattt gtccttcgta tagcaagttt tttgtctatc 5520
agcagagagc aacagatggt ttattgagtg aagccttaa aagcacacac cacacacagc 5580
taactgccaa aatacattga ccgtagttagc tgttcaactc ctagtactta gaaatacacg 5640
tatggttaat gttcagtcca acaaaccaca cacagtaaat gtttattaat agtcatggtt 5700
cgtattttag gtgactgaaa ttgcaacagt gatcataatg aggtttgtta aaatgatagc 5760
tatattcaaa atgtctatat gtttatttgg acttttgagg ttaaagacag tcatataaac 5820
gtcctgtttc tgttttaatg ttatcataga attttttaat gaaactaaat tcaattgaaa 5880
taaatgatag ttttcatctc caaaaaaaa aaaaaaaagg gcggccgctc gagtctagag 5940
ggcccgttta aacccgctga tcagcctcga ctgtgccttc tagttgccag ccactgttg 6000
tttgccctc ccccgctgct tcttgacctc tggagggtgc cactccact gtccttctc 6060
aataaaatga ggaattgca tc 6082

```

<210> 536

<211> 6140

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (4535)

<223> n=A,T,C or G

<400> 536

```

cagtggcgca gtctcagctc actgcagcct ccacctcctg tgttcaagca gtcctcctgc 60
ctcagccacc agactagcag gtctcccccg cctctttctt ggaaggacac ttgccattgg 120
atthaggaac cacttgata atccaggatg atgtcttcac tccaacatcc tcagtttaat 180
tccatgtgca aatacccttt tcccaaataa cattcaattc tttaccagga aagggtggctc 240
aatcccttgt ttaaaattgg ccataaacgg agattagagg aagatgatat gtattcagtg 300
ctgccagaag accgctcaca gcaccttgga gaggagtgtc aagggttctg ggataaagaa 360
gttttaagag ctgagaatga cgcacagaag cttcttttaa caagagcaat cataaagtg 420

```

tactggaaat cttatttagt tttgggaatt tttacgttaa ttgaggaaag tgccaaagta 480
atccagccca tatttttggg aaaaattatt aattattttg aaaattatga tcccatggat 540
tctgtggcct tgaacacagc gtacgcctat gccacggtgc tgactttttg cacgctcatt 600
ttggctatac tgcatacact atatttttat cacgttcagt gtgctgggat gaggttacga 660
gtagccatgt gccatatgat ttatcggaag gcacttcgtc ttagtaacat ggccatgggg 720
aagacaacca caggccagat agtcaatctg ctgtccaatg atgtgaacaa gtttgatcag 780
gtgacagtgt tcttacactt cctgtgggca ggaccactgc aggcgatcgc agtgactgcc 840
ctactctgga tggagatagg aatatcgtgc cttgctggga tggcagttct aatcattctc 900
ctgcccttgc aaagctgttt tgggaagttg ttctcatcac tgaggagtaa aactgcaact 960
ttcacggtag ccaggatcag gaccatgaat tttgttataa ctggtataag gataataaaa 1020
atgtacgcct gggaaaagtc attttcaaat cttattacca atttgagaaa gaaggagatt 1080
tccaagattc tgagaagttc ctgcctcagg gggatgaatt tggcttcgtt tttcagtgc 1140
agcaaaatca tctgtgttgc gaccttcacc acctacgtgc tctcggcag tgtgatcaca 1200
gccagccgcg tgttcgtggc agtgacgtgc tatggggctg tgcggctgac ggttaccctc 1260
ttcttccctc cagccattga gagggtgtca gaggcaatcg tcagcatccg aagaatccag 1320
acctttttgc tacttgatga gatatacag cgcaaccgtc agctgccgtc agatggtaaa 1380
aagatgggtc atgtgcagga ttttcaactc ctggggata aggcatacaga gaccccaact 1440
ctacaaggcc tttcctttac tgtcagacct ggcgaattgt tagctgtggt cggccccgtg 1500
ggagcagggg agtcatcact gttaagtgc gtgctcgggg aattggcccc aagtcaagg 1560
ctggtcagcg tgcattggaag aattgcctat gtgtctcagc agcctgggt gttctcggga 1620
actctgagga gtaatatatt atttgggaag aaatacgaag aggaacgata tgaaaaagtc 1680
ataaaggctt gtgctctgaa aaaggattta cagctgttgg aggatgggtg tctgactgtg 1740
ataggagatc ggggaaccac gctgagtggg gggcagaaaag cacgggtaaa ccttgcaaga 1800
gcagtgtatc aagatgctga catctatctc ctggacgatc ctctcagtc agtagatcg 1860
gaagttagca gacactgtt cgaactgtgt atttgtcaaa ttttgcata gaagatcaca 1920
attttagtga ctcatcagtt gcagtacctc aaagctgcaa gtcagattct gatattgaaa 1980
gatggtaaaa tgggtgcagaa ggggacttac actgagttcc taaaatctgg tatagatttt 2040
ggctcccttt taaagaagga taatgaggaa agtgaacaac ctccagttcc aggaactccc 2100
acactaagga atcgtacctc ctcatagttc tgggtttggg ctcaacaatc ttctagacc 2160
tccttgaag atgggtgctc ggagagccaa gatacagaga atgtcccagt tacactatca 2220
gaggagaacc gttctgaagg aaaagtgggt tttcaggcct ataagaatta cttcagagct 2280
ggtgctcact ggattgtctt cattttcctt atttctctaa aactgcagc tcaggttgcc 2340
tatgtgcttc aagattggtg gctttcatatc tgggcaaaaca aacaaagtat gctaaatgtc 2400
actgtaaatg gaggaggaaa tgtaaccgag aagctagatc ttaactggta cttaggaatt 2460
tattcaggtt taaactgtagc taccgttctt tttggcatag caagatctct attgggtatc 2520
tacgtccttg ttaactcttc acaaaacttg cacaacaaaa tgtttgagtc aattctgaaa 2580
gctccggtat tattctttga tagaaatcca ataggaagaa ttttaaatcg tttctccaaa 2640
gacattggac acttggatga tttgctgccg ctgacgtttt tagatttcat ccagacattg 2700
ctacaagtgg ttggtgtggt ctctgtggct gtggccgtga ttccttggat cgcaataccc 2760
ttggttcccc ttggaatcat tttcattttt cttcggcgat attttttggg aacgtcaaga 2820
gatgtgaagc gcctggaatc tacaactcgg agtccagtg tttcccactt gtcattctct 2880
ctccaggggc tctggaccat ccgggcatac aaagcagaag agaggtgtca ggaactgtt 2940
gatgcacacc aggatttaca ttcagaggct tgggtcttgc ttttgacaac gtcccgtcg 3000
ttcggcgctc gtctggatgc catctgtgcc atgtttgtca tcatcggtgc ctttgggtcc 3060
ctgattctgg caaaaactct ggatgccggg cagggttggt tggcactgtc ctatgccctc 3120
acgctcatgg ggatgtttca gtggtgtggt cgacaaagtg ctgaagtga gaatatgatg 3180
atctcagtag aaagggtcat tgaatacaca gacctgaaa aagaagcacc ttgggaatat 3240
cagaaacgcc caccaccagc ctggccccat gaaggagtga taatctttga caatgtgaac 3300
ttcatgtaca gtccagggtg gcctctggta ctgaagcatc tgacagcact cattaaatca 3360
caagaaaagg ttggcattgt ggaagaacc ggagctggaa aaagtccct catctcagc 3420
cttttttagat tgtcagaacc cgaaggtaaa atttggattg ataagatctt gacaactgaa 3480
attggacttc acgatttaag gaagaaaatg tcaatcatat ctcagggaacc tgttttgttc 3540
actggaacaa tgaggaaaaa cctggatccc tttaatgagc acacggatga ggaactgtgg 3600
aatgccttac aagaggtaca acttaagaa accattgaag atcttctggt taaaatggat 3660
actgaattag cagaatcagg atccaatttt agtgttggac aaagacaact ggtgtgcctt 3720
gccagggcaa tttcaggaa aaatcagata ttgattattg atgaagcgac ggcaaatgtg 3780
gatccaagaa ctgatgagtt aatacaaaaa aaaatccggg agaaatttgc ccactgcacc 3840
gtgctaacca ttgcacacag attgaacacc attattgaca gcgacaagat aatggtttta 3900

gattcaggaa gactgaaaga atatgatgag cegtatgttt tgctgcaaaa taaagagagc 3960
 ctattttaca agatgggtgca acaactgggc aaggcagaag ccgctgccct cactgaaaca 4020
 gcaaaacaga gatgggggtt caccatgttg gccaggctgg tctcaaactc ctgacctcaa 4080
 gtgatccacc tgccttgccc tcccaactg ctgagattac aggtgtgagc caccacgccc 4140
 agcctgagta tacttcaaaa gaaattatcc acatattggt cacactgacc acatggttac 4200
 aaacacttcc aatggacagc cctcgacctt aactattttc gagacagcac tgtgaatcca 4260
 accaaaatgt caagtccgtt ccgaaggcat ttgccactag tttttggact atgtaaacca 4320
 cattgtactt ttttttactt tggcaacaaa tatttatata tacaagatgc tagttcattt 4380
 gaatatttct cccaacttat ccaaggatct ccagctctaa caaaatgggt tatttttatt 4440
 taaatgtcaa tagtkgkttt ttaaaatcca aatcagaggt gcaggccacc agttaaatgc 4500
 cgtctatcag gttttgtgcc ttaagagact acagnagtca gaagctcatt tttaaaggag 4560
 taggcagag tttgtcacagg tttttgttgg tgtttktatt gcccccaaaa ttacatgtta 4620
 atttccattt atatcagggg attctattta cttgaagact gtgaagttgc cattttgtct 4680
 cattgttttc tttgacatam ctaggatcca ttatttcccc tgaaggcttc ttgkagaaaa 4740
 tagtacagtt acaaccaata ggaactamca aaaagaaaaa gttttgtgaca ttgtagtagg 4800
 gagtgtgtac ccttactacc ccatcaaaaa aaaaaatgga tacatggtta aaggatagaa 4860
 gggcaatatt ttatcatatg ttctaaaaga gaaggaaag aaaatactac tttctcaaaa 4920
 tgggaagccct taaaggtgct ttgatactga aggcacacaaa tgtgaccgtc catcctcctt 4980
 tagagttgca tgacttgac acggttaactg ttgcagtttt agactcagca ttgtgacact 5040
 tcccaagaag gccaaacctc taaccgacat tcctgaaata cgtggcatta ttcttttttg 5100
 gattttctcat ttaggaaggc taacctctg ttgamgtam kccttttggg ttgggctgta 5160
 ttgaaatcct ttctaaattg catgaatagg ctctgctaac cgtgatgaga caaactgaaa 5220
 attattgcaa gcattgacta taattatgca gtacgttctc aggatgcac caggggttca 5280
 ttttcatgag cctgtccagg ttagtttact cctgaccact aatagcattg tcatttgggc 5340
 ttctgttga atgaatcaac aaaccacaat acttctctggg accttttgta ctttatttga 5400
 actatgagtc ttaattttt cctgatgatg gtggctgtaa tatgttgagt tcagtttact 5460
 aaaggtttta ctattatggt ttgaaggag tctcatgacc tctcagaaaa ggtgcacctc 5520
 cctgaaattg catatagta tatagacatg cacacgtgtg catttgtttg tatacatata 5580
 tttgtccttc gtatagcaag tttttgtctc atcagcagag agcaacagat gttttattga 5640
 gtgaagcctt aaaaagcaca caccacacac agctaactgc caaaatcacat tgaccgtagt 5700
 agctgttcaa ctctagtac ttagaatac acgtatggtt aatgttcagt ccaacaaacc 5760
 acacacagta aatgtttatt aatagtcatg gttcgtattt taggtgactg aaattgcaac 5820
 agtgatcata atgaggtttg ttaaaatgat agctatattc aaaatgtcta tatgtttatt 5880
 tggacttttg aggttaaaga cagtcataata aacgtectgt ttctgtttta atgttatcat 5940
 agaatttttt aatgaaacta aattcaattg aaataaatga tagttttcat ctccaaaaaa 6000
 aaaaaaaaag ggcggcccg cagagtcctag agggcccggt ttaaacccgc tgatcagcct 6060
 cgactgtgcc ttctagtgc cagccatctg ttgtttggcc ctcccccggt ccttccttga 6120
 ccctggaagg ggccactccc 6140

<210> 537

<211> 1228

<212> PRT

<213> Homo sapiens

<400> 537

Met Leu Pro Val Tyr Gln Glu Val Lys Pro Asn Pro Leu Gln Asp Ala
 5 10 15

Asn Leu Cys Ser Arg Val Phe Phe Trp Trp Leu Asn Pro Leu Phe Lys
 20 25 30

Ile Gly His Lys Arg Arg Leu Glu Glu Asp Asp Met Tyr Ser Val Leu
 35 40 45

Pro Glu Asp Arg Ser Gln His Leu Gly Glu Glu Leu Gln Gly Phe Trp
 50 55 60

Asp Lys Glu Val Leu Arg Ala Glu Asn Asp Ala Gln Lys Pro Ser Leu

190

65		70		75		80
Thr Arg Ala Ile Ile Lys Cys Tyr Trp Lys Ser Tyr Leu Val Leu Gly						
	85			90		95
Ile Phe Thr Leu Ile Glu Glu Ser Ala Lys Val Ile Gln Pro Ile Phe						
	100		105		110	
Leu Gly Lys Ile Ile Asn Tyr Phe Glu Asn Tyr Asp Pro Met Asp Ser						
	115		120		125	
Val Ala Leu Asn Thr Ala Tyr Ala Tyr Ala Thr Val Leu Thr Phe Cys						
	130		135		140	
Thr Leu Ile Leu Ala Ile Leu His His Leu Tyr Phe Tyr His Val Gln						
	145		150		155	160
Cys Ala Gly Met Arg Leu Arg Val Ala Met Cys His Met Ile Tyr Arg						
	165		170		175	
Lys Ala Leu Arg Leu Ser Asn Met Ala Met Gly Lys Thr Thr Thr Gly						
	180		185		190	
Gln Ile Val Asn Leu Leu Ser Asn Asp Val Asn Lys Phe Asp Gln Val						
	195		200		205	
Thr Val Phe Leu His Phe Leu Trp Ala Gly Pro Leu Gln Ala Ile Ala						
	210		215		220	
Val Thr Ala Leu Leu Trp Met Glu Ile Gly Ile Ser Cys Leu Ala Gly						
	225		230		235	240
Met Ala Val Leu Ile Ile Leu Leu Pro Leu Gln Ser Cys Phe Gly Lys						
	245		250		255	
Leu Phe Ser Ser Leu Arg Ser Lys Thr Ala Thr Phe Thr Asp Ala Arg						
	260		265		270	
Ile Arg Thr Met Asn Glu Val Ile Thr Gly Ile Arg Ile Ile Lys Met						
	275		280		285	
Tyr Ala Trp Glu Lys Ser Phe Ser Asn Leu Ile Thr Asn Leu Arg Lys						
	290		295		300	
Lys Glu Ile Ser Lys Ile Leu Arg Ser Ser Cys Leu Arg Gly Met Asn						
	305		310		315	320
Leu Ala Ser Phe Phe Ser Ala Ser Lys Ile Ile Val Phe Val Thr Phe						
	325		330		335	
Thr Thr Tyr Val Leu Leu Gly Ser Val Ile Thr Ala Ser Arg Val Phe						
	340		345		350	
Val Ala Val Thr Leu Tyr Gly Ala Val Arg Leu Thr Val Thr Leu Phe						
	355		360		365	
Phe Pro Ser Ala Ile Glu Arg Val Ser Glu Ala Ile Val Ser Ile Arg						
	370		375		380	

Arg Ile Gln Thr Phe Leu Leu Leu Asp Glu Ile Ser Gln Arg Asn Arg
 385 390 395 400
 Gln Leu Pro Ser Asp Gly Lys Lys Met Val His Val Gln Asp Phe Thr
 405 410 415
 Ala Phe Trp Asp Lys Ala Ser Glu Thr Pro Thr Leu Gln Gly Leu Ser
 420 425 430
 Phe Thr Val Arg Pro Gly Glu Leu Leu Ala Val Val Gly Pro Val Gly
 435 440 445
 Ala Gly Lys Ser Ser Leu Leu Ser Ala Val Leu Gly Glu Leu Ala Pro
 450 455 460
 Ser His Gly Leu Val Ser Val His Gly Arg Ile Ala Tyr Val Ser Gln
 465 470 475 480
 Gln Pro Trp Val Phe Ser Gly Thr Leu Arg Ser Asn Ile Leu Phe Gly
 485 490 495
 Lys Lys Tyr Glu Lys Glu Arg Tyr Glu Lys Val Ile Lys Ala Cys Ala
 500 505 510
 Leu Lys Lys Asp Leu Gln Leu Leu Glu Asp Gly Asp Leu Thr Val Ile
 515 520 525
 Gly Asp Arg Gly Thr Thr Leu Ser Gly Gly Gln Lys Ala Arg Val Asn
 530 535 540
 Leu Ala Arg Ala Val Tyr Gln Asp Ala Asp Ile Tyr Leu Leu Asp Asp
 545 550 555 560
 Pro Leu Ser Ala Val Asp Ala Glu Val Ser Arg His Leu Phe Glu Leu
 565 570 575
 Cys Ile Cys Gln Ile Leu His Glu Lys Ile Thr Ile Leu Val Thr His
 580 585 590
 Gln Leu Gln Tyr Leu Lys Ala Ala Ser Gln Ile Leu Ile Leu Lys Asp
 595 600 605
 Gly Lys Met Val Gln Lys Gly Thr Tyr Thr Glu Phe Leu Lys Ser Gly
 610 615 620
 Ile Asp Phe Gly Ser Leu Leu Lys Lys Asp Asn Glu Glu Ser Glu Gln
 625 630 635 640
 Pro Pro Val Pro Gly Thr Pro Thr Leu Arg Asn Arg Thr Phe Ser Glu
 645 650 655
 Ser Ser Val Trp Ser Gln Gln Ser Ser Arg Pro Ser Leu Lys Asp Gly
 660 665 670
 Ala Leu Glu Ser Gln Asp Thr Glu Asn Val Pro Val Thr Leu Ser Glu
 675 680 685

Glu Asn Arg Ser Glu Gly Lys Val Gly Phe Gln Ala Tyr Lys Asn Tyr
 690 695 700
 Phe Arg Ala Gly Ala His Trp Ile Val Phe Ile Phe Leu Ile Leu Leu
 705 710 715 720
 Asn Thr Ala Ala Gln Val Ala Tyr Val Leu Gln Asp Trp Trp Leu Ser
 725 730 735
 Tyr Trp Ala Asn Lys Gln Ser Met Leu Asn Val Thr Val Asn Gly Gly
 740 745 750
 Gly Asn Val Thr Glu Lys Leu Asp Leu Asn Trp Tyr Leu Gly Ile Tyr
 755 760 765
 Ser Gly Leu Thr Val Ala Thr Val Leu Phe Gly Ile Ala Arg Ser Leu
 770 775 780
 Leu Val Phe Tyr Val Leu Val Asn Ser Ser Gln Thr Leu His Asn Lys
 785 790 795 800
 Met Phe Glu Ser Ile Leu Lys Ala Pro Val Leu Phe Phe Asp Arg Asn
 805 810 815
 Pro Ile Gly Arg Ile Leu Asn Arg Phe Ser Lys Asp Ile Gly His Leu
 820 825 830
 Asp Asp Leu Leu Pro Leu Thr Phe Leu Asp Phe Ile Gln Thr Leu Leu
 835 840 845
 Gln Val Val Gly Val Val Ser Val Ala Val Ala Val Ile Pro Trp Ile
 850 855 860
 Ala Ile Pro Leu Val Pro Leu Gly Ile Ile Phe Ile Phe Leu Arg Arg
 865 870 875 880
 Tyr Phe Leu Glu Thr Ser Arg Asp Val Lys Arg Leu Glu Ser Thr Thr
 885 890 895
 Arg Ser Pro Val Phe Ser His Leu Ser Ser Ser Leu Gln Gly Leu Trp
 900 905 910
 Thr Ile Arg Ala Tyr Lys Ala Glu Glu Arg Cys Gln Glu Leu Phe Asp
 915 920 925
 Ala His Gln Asp Leu His Ser Glu Ala Trp Phe Leu Phe Leu Thr Thr
 930 935 940
 Ser Arg Trp Phe Ala Val Arg Leu Asp Ala Ile Cys Ala Met Phe Val
 945 950 955 960
 Ile Ile Val Ala Phe Gly Ser Leu Ile Leu Ala Lys Thr Leu Asp Ala
 965 970 975
 Gly Gln Val Gly Leu Ala Leu Ser Tyr Ala Leu Thr Leu Met Gly Met
 980 985 990
 Phe Gln Trp Cys Val Arg Gln Ser Ala Glu Val Glu Asn Met Met Ile

995 1000 1005
 Ser Val Glu Arg Val Ile Glu Tyr Thr Asp Leu Glu Lys Glu Ala Pro
 1010 1015 1020
 Trp Glu Tyr Gln Lys Arg Pro Pro Pro Ala Trp Pro His Glu Gly Val
 1025 1030 1035 1040
 Ile Ile Phe Asp Asn Val Asn Phe Met Tyr Ser Pro Gly Gly Pro Leu
 1045 1050 1055
 Val Leu Lys His Leu Thr Ala Leu Ile Lys Ser Gln Glu Lys Val Gly
 1060 1065 1070
 Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser Leu Ile Ser Ala Leu
 1075 1080 1085
 Phe Arg Leu Ser Glu Pro Glu Gly Lys Ile Trp Ile Asp Lys Ile Leu
 1090 1095 1100
 Thr Thr Glu Ile Gly Leu His Asp Leu Arg Lys Lys Met Ser Ile Ile
 1105 1110 1115 1120
 Pro Gln Glu Pro Val Leu Phe Thr Gly Thr Met Arg Lys Asn Leu Asp
 1125 1130 1135
 Pro Phe Asn Glu His Thr Asp Glu Glu Leu Trp Asn Ala Leu Gln Glu
 1140 1145 1150
 Val Gln Leu Lys Glu Thr Ile Glu Asp Leu Pro Gly Lys Met Asp Thr
 1155 1160 1165
 Glu Leu Ala Glu Ser Gly Ser Asn Phe Ser Val Gly Gln Arg Gln Leu
 1170 1175 1180
 Val Cys Leu Ala Arg Ala Ile Leu Arg Lys Asn Gln Ile Leu Ile Ile
 1185 1190 1195 1200
 Asp Glu Ala Thr Ala Asn Val Asp Pro Arg Thr Asp Glu Leu Ile Gln
 1205 1210 1215
 Lys Lys Ser Gly Arg Asn Leu Pro Thr Ala Pro Cys
 1220 1225
 <210> 538
 <211> 1261
 <212> PRT
 <213> Homo sapiens
 <400> 538
 Met Tyr Ser Val Leu Pro Glu Asp Arg Ser Gln His Leu Gly Glu Glu
 5 10 15
 Leu Gln Gly Phe Trp Asp Lys Glu Val Leu Arg Ala Glu Asn Asp Ala
 20 25 30
 Gln Lys Pro Ser Leu Thr Arg Ala Ile Ile Lys Cys Tyr Trp Lys Ser
 35 40 45

Tyr Leu Val Leu Gly Ile Phe Thr Leu Ile Glu Glu Ser Ala Lys Val
 50 55 60
 Ile Gln Pro Ile Phe Leu Gly Lys Ile Ile Asn Tyr Phe Glu Asn Tyr
 65 70 75 80
 Asp Pro Met Asp Ser Val Ala Leu Asn Thr Ala Tyr Ala Tyr Ala Thr
 85 90 95
 Val Leu Thr Phe Cys Thr Leu Ile Leu Ala Ile Leu His His Leu Tyr
 100 105 110
 Phe Tyr His Val Gln Cys Ala Gly Met Arg Leu Arg Val Ala Met Cys
 115 120 125
 His Met Ile Tyr Arg Lys Ala Leu Arg Leu Ser Asn Met Ala Met Gly
 130 135 140
 Lys Thr Thr Thr Gly Gln Ile Val Asn Leu Leu Ser Asn Asp Val Asn
 145 150 155 160
 Lys Phe Asp Gln Val Thr Val Phe Leu His Phe Leu Trp Ala Gly Pro
 165 170 175
 Leu Gln Ala Ile Ala Val Thr Ala Leu Leu Trp Met Glu Ile Gly Ile
 180 185 190
 Ser Cys Leu Ala Gly Met Ala Val Leu Ile Ile Leu Leu Pro Leu Gln
 195 200 205
 Ser Cys Phe Gly Lys Leu Phe Ser Ser Leu Arg Ser Lys Thr Ala Thr
 210 215 220
 Phe Thr Asp Ala Arg Ile Arg Thr Met Asn Glu Val Ile Thr Gly Ile
 225 230 235 240
 Arg Ile Ile Lys Met Tyr Ala Trp Glu Lys Ser Phe Ser Asn Leu Ile
 245 250 255
 Thr Asn Leu Arg Lys Lys Glu Ile Ser Lys Ile Leu Arg Ser Ser Cys
 260 265 270
 Leu Arg Gly Met Asn Leu Ala Ser Phe Phe Ser Ala Ser Lys Ile Ile
 275 280 285
 Val Phe Val Thr Phe Thr Thr Tyr Val Leu Leu Gly Ser Val Ile Thr
 290 295 300
 Ala Ser Arg Val Phe Val Ala Val Thr Leu Tyr Gly Ala Val Arg Leu
 305 310 315 320
 Thr Val Thr Leu Phe Phe Pro Ser Ala Ile Glu Arg Val Ser Glu Ala
 325 330 335
 Ile Val Ser Ile Arg Arg Ile Gln Thr Phe Leu Leu Leu Asp Glu Ile
 340 345 350

Ser Gln Arg Asn Arg Gln Leu Pro Ser Asp Gly Lys Lys Met Val His
 355 360 365
 Val Gln Asp Phe Thr Ala Phe Trp Asp Lys Ala Ser Glu Thr Pro Thr
 370 375 380
 Leu Gln Gly Leu Ser Phe Thr Val Arg Pro Gly Glu Leu Leu Ala Val
 385 390 395 400
 Val Gly Pro Val Gly Ala Gly Lys Ser Ser Leu Leu Ser Ala Val Leu
 405 410 415
 Gly Glu Leu Ala Pro Ser His Gly Leu Val Ser Val His Gly Arg Ile
 420 425 430
 Ala Tyr Val Ser Gln Gln Pro Trp Val Phe Ser Gly Thr Leu Arg Ser
 435 440 445
 Asn Ile Leu Phe Gly Lys Lys Tyr Glu Lys Glu Arg Tyr Glu Lys Val
 450 455 460
 Ile Lys Ala Cys Ala Leu Lys Lys Asp Leu Gln Leu Leu Glu Asp Gly
 465 470 475 480
 Asp Leu Thr Val Ile Gly Asp Arg Gly Thr Thr Leu Ser Gly Gly Gln
 485 490 495
 Lys Ala Arg Val Asn Leu Ala Arg Ala Val Tyr Gln Asp Ala Asp Ile
 500 505 510
 Tyr Leu Leu Asp Asp Pro Leu Ser Ala Val Asp Ala Glu Val Ser Arg
 515 520 525
 His Leu Phe Glu Leu Cys Ile Cys Gln Ile Leu His Glu Lys Ile Thr
 530 535 540
 Ile Leu Val Thr His Gln Leu Gln Tyr Leu Lys Ala Ala Ser Gln Ile
 545 550 555 560
 Leu Ile Leu Lys Asp Gly Lys Met Val Gln Lys Gly Thr Tyr Thr Glu
 565 570 575
 Phe Leu Lys Ser Gly Ile Asp Phe Gly Ser Leu Leu Lys Lys Asp Asn
 580 585 590
 Glu Glu Ser Glu Gln Pro Pro Val Pro Gly Thr Pro Thr Leu Arg Asn
 595 600 605
 Arg Thr Phe Ser Glu Ser Ser Val Trp Ser Gln Gln Ser Ser Arg Pro
 610 615 620
 Ser Leu Lys Asp Gly Ala Leu Glu Ser Gln Asp Thr Glu Asn Val Pro
 625 630 635 640
 Val Thr Leu Ser Glu Glu Asn Arg Ser Glu Gly Lys Val Gly Phe Gln
 645 650 655
 Ala Tyr Lys Asn Tyr Phe Arg Ala Gly Ala His Trp Ile Val Phe Ile

660	665	670
Phe Leu Ile Leu Leu Asn Thr Ala Ala Gln Val Ala Tyr Val Leu Gln		
675	680	685
Asp Trp Trp Leu Ser Tyr Trp Ala Asn Lys Gln Ser Met Leu Asn Val		
690	695	700
Thr Val Asn Gly Gly Gly Asn Val Thr Glu Lys Leu Asp Leu Asn Trp		
705	710	715
Tyr Leu Gly Ile Tyr Ser Gly Leu Thr Val Ala Thr Val Leu Phe Gly		
725	730	735
Ile Ala Arg Ser Leu Leu Val Phe Tyr Val Leu Val Asn Ser Ser Gln		
740	745	750
Thr Leu His Asn Lys Met Phe Glu Ser Ile Leu Lys Ala Pro Val Leu		
755	760	765
Phe Phe Asp Arg Asn Pro Ile Gly Arg Ile Leu Asn Arg Phe Ser Lys		
770	775	780
Asp Ile Gly His Leu Asp Asp Leu Leu Pro Leu Thr Phe Leu Asp Phe		
785	790	795
Ile Gln Thr Leu Leu Gln Val Val Gly Val Val Ser Val Ala Val Ala		
805	810	815
Val Ile Pro Trp Ile Ala Ile Pro Leu Val Pro Leu Gly Ile Ile Phe		
820	825	830
Ile Phe Leu Arg Arg Tyr Phe Leu Glu Thr Ser Arg Asp Val Lys Arg		
835	840	845
Leu Glu Ser Thr Thr Arg Ser Pro Val Phe Ser His Leu Ser Ser Ser		
850	855	860
Leu Gln Gly Leu Trp Thr Ile Arg Ala Tyr Lys Ala Glu Glu Arg Cys		
865	870	875
Gln Glu Leu Phe Asp Ala His Gln Asp Leu His Ser Glu Ala Trp Phe		
885	890	895
Leu Phe Leu Thr Thr Ser Arg Trp Phe Ala Val Arg Leu Asp Ala Ile		
900	905	910
Cys Ala Met Phe Val Ile Ile Val Ala Phe Gly Ser Leu Ile Leu Ala		
915	920	925
Lys Thr Leu Asp Ala Gly Gln Val Gly Leu Ala Leu Ser Tyr Ala Leu		
930	935	940
Thr Leu Met Gly Met Phe Gln Trp Cys Val Arg Gln Ser Ala Glu Val		
945	950	955
Glu Asn Met Met Ile Ser Val Glu Arg Val Ile Glu Tyr Thr Asp Leu		
965	970	975

Glu Lys Glu Ala Pro Trp Glu Tyr Gln Lys Arg Pro Pro Pro Ala Trp
 980 985 990
 Pro His Glu Gly Val Ile Ile Phe Asp Asn Val Asn Phe Met Tyr Ser
 995 1000 1005
 Pro Gly Gly Pro Leu Val Leu Lys His Leu Thr Ala Leu Ile Lys Ser
 1010 1015 1020
 Gln Glu Lys Val Gly Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser
 1025 1030 1035 1040
 Leu Ile Ser Ala Leu Phe Arg Leu Ser Glu Pro Glu Gly Lys Ile Trp
 1045 1050 1055
 Ile Asp Lys Ile Leu Thr Thr Glu Ile Gly Leu His Asp Leu Arg Lys
 1060 1065 1070
 Lys Met Ser Ile Ile Pro Gln Glu Pro Val Leu Phe Thr Gly Thr Met
 1075 1080 1085
 Arg Lys Asn Leu Asp Pro Phe Asn Glu His Thr Asp Glu Glu Leu Trp
 1090 1095 1100
 Asn Ala Leu Gln Glu Val Gln Leu Lys Glu Thr Ile Glu Asp Leu Pro
 1105 1110 1115 1120
 Gly Lys Met Asp Thr Glu Leu Ala Glu Ser Gly Ser Asn Phe Ser Val
 1125 1130 1135
 Gly Gln Arg Gln Leu Val Cys Leu Ala Arg Ala Ile Leu Arg Lys Asn
 1140 1145 1150
 Gln Ile Leu Ile Ile Asp Glu Ala Thr Ala Asn Val Asp Pro Arg Thr
 1155 1160 1165
 Asp Glu Leu Ile Gln Lys Lys Ile Arg Glu Lys Phe Ala His Cys Thr
 1170 1175 1180
 Val Leu Thr Ile Ala His Arg Leu Asn Thr Ile Ile Asp Ser Asp Lys
 1185 1190 1195 1200
 Ile Met Val Leu Asp Ser Gly Arg Leu Lys Glu Tyr Asp Glu Pro Tyr
 1205 1210 1215
 Val Leu Leu Gln Asn Lys Glu Ser Leu Phe Tyr Lys Met Val Gln Gln
 1220 1225 1230
 Leu Gly Lys Ala Glu Ala Ala Leu Thr Glu Thr Ala Lys Gln Arg
 1235 1240 1245
 Trp Gly Phe Thr Met Leu Ala Arg Leu Val Ser Asn Ser
 1250 1255 1260
 <210> 539
 <211> 10
 <212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 539

Cys Leu Ser His Ser Val Ala Val Val Thr
1 5 10

<210> 540

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 540

Ala Val Val Thr Ala Ser Ala Ala Leu
1 5

<210> 541

<211> 14

<212> PRT

<213> Homo sapiens

<400> 541

Leu Ala Gly Leu Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu
5 10

<210> 542

<211> 15

<212> PRT

<213> Homo sapiens

<400> 542

Thr Gln Val Val Phe Asp Lys Ser Asp Leu Ala Lys Tyr Ser Ala
5 10 15

<210> 543

<211> 12

<212> PRT

<213> Homo sapiens

<400> 543

Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val
5 10

<210> 544

<211> 18

<212> PRT

<213> Homo sapiens

<400> 544

Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val Glu Glu Lys Phe

199

5

10

15

Met Thr

<210> 545

<211> 18

<212> PRT

<213> Homo sapiens

<400> 545

Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala
5 10 15

Ser Val

<210> 546

<211> 29

<212> PRT

<213> Homo sapiens

<400> 546

Phe Val Gly Glu Gly Leu Tyr Gln Gly Val Pro Arg Ala Glu Pro Gly
5 10 15Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg Met
20 25

<210> 547

<211> 58

<212> PRT

<213> Homo sapiens

<400> 547

Val Ala Glu Glu Ala Ala Leu Gly Pro Thr Glu Pro Ala Glu Gly Leu
5 10 15Ser Ala Pro Ser Leu Ser Pro His Cys Cys Pro Cys Arg Ala Arg Leu
20 25 30Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro Arg Leu His Gln Leu Cys
35 40 45Cys Arg Met Pro Arg Thr Leu Arg Arg Leu
50 55

<210> 548

<211> 18

<212> PRT

<213> Homo sapiens

<400> 548

Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu Gly Thr Gln Glu

200

5

10

15

Glu Cys

<210> 549

<211> 18

<212> PRT

<213> Homo sapiens

<400> 549

Leu Glu Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg
5 10 15

Gln Ala

<210> 550

<211> 14

<212> PRT

<213> Homo sapiens

<400> 550

Ser Asp His Trp Arg Gly Arg Tyr Gly Arg Arg Arg Pro Phe
5 10

<210> 551

<211> 11

<212> PRT

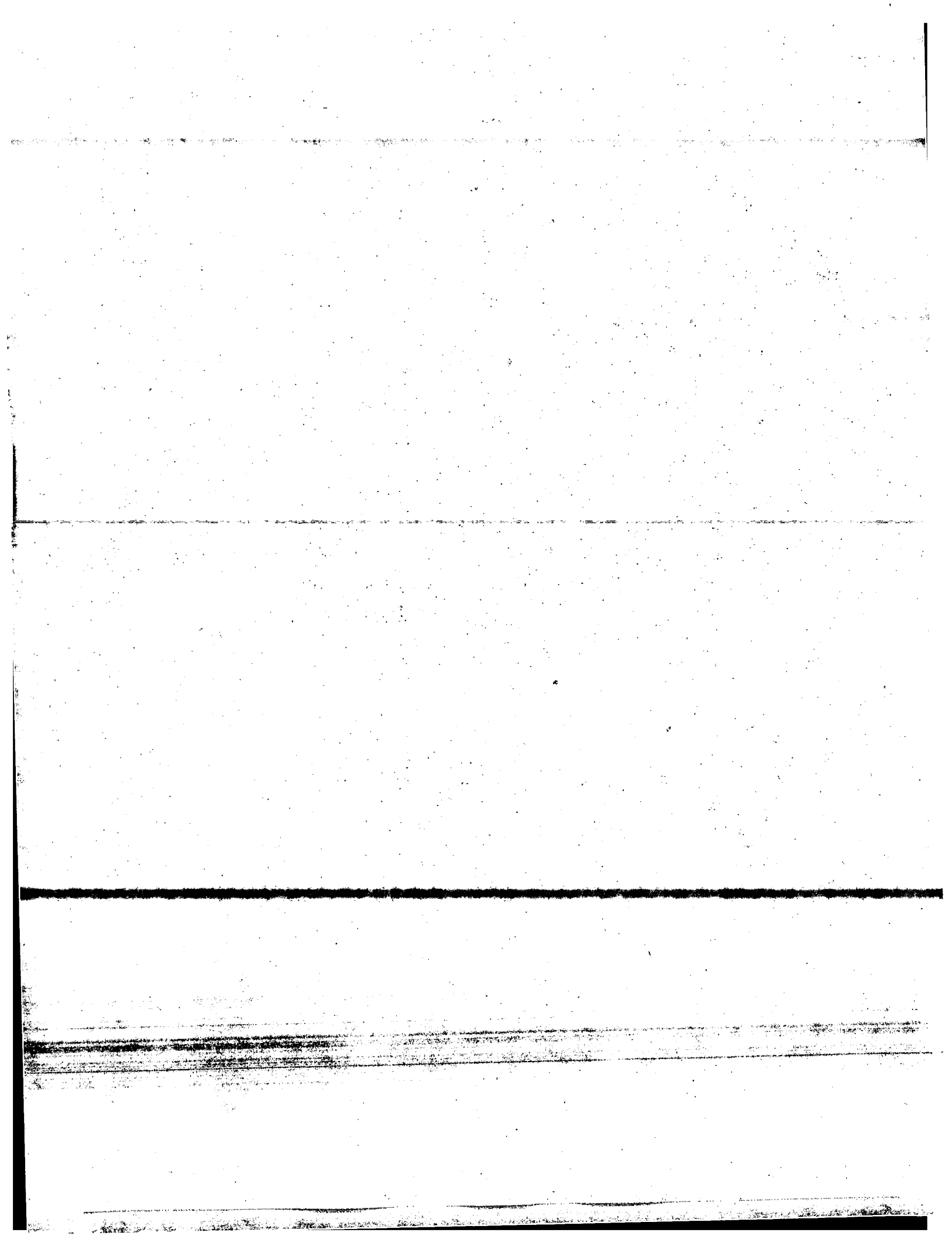
<213> Artificial Sequence

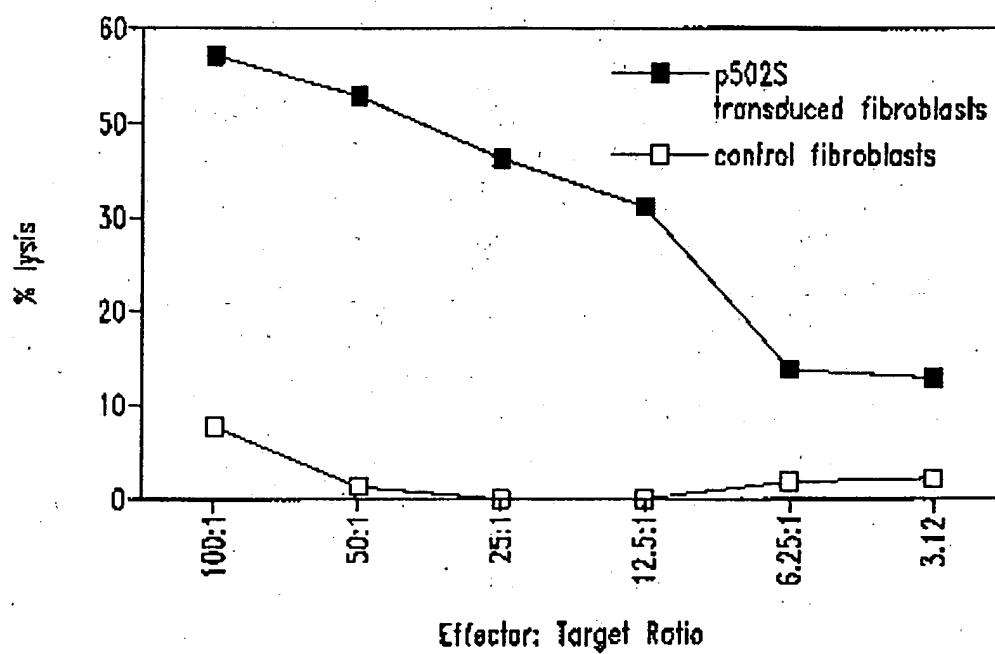
<220>

<223> Made in a lab

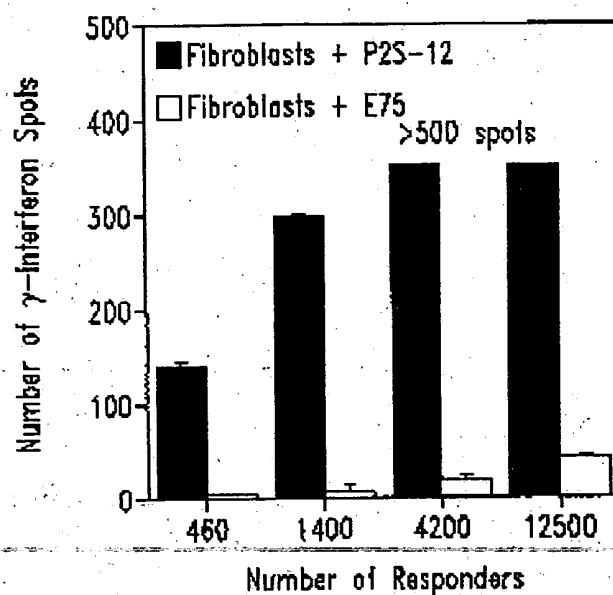
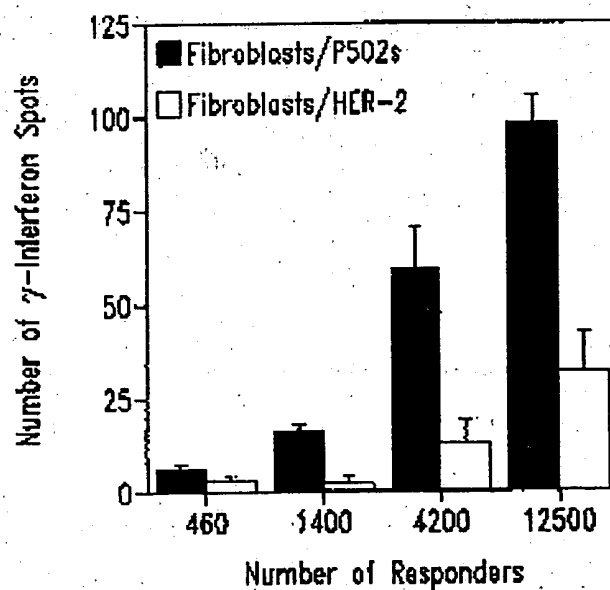
<400> 551

Phe Asp Lys Ser Asp Leu Ala Lys Tyr Ser Ala
1 5 10



*Fig. 1*

212

*Fig. 2A**Fig. 2B*

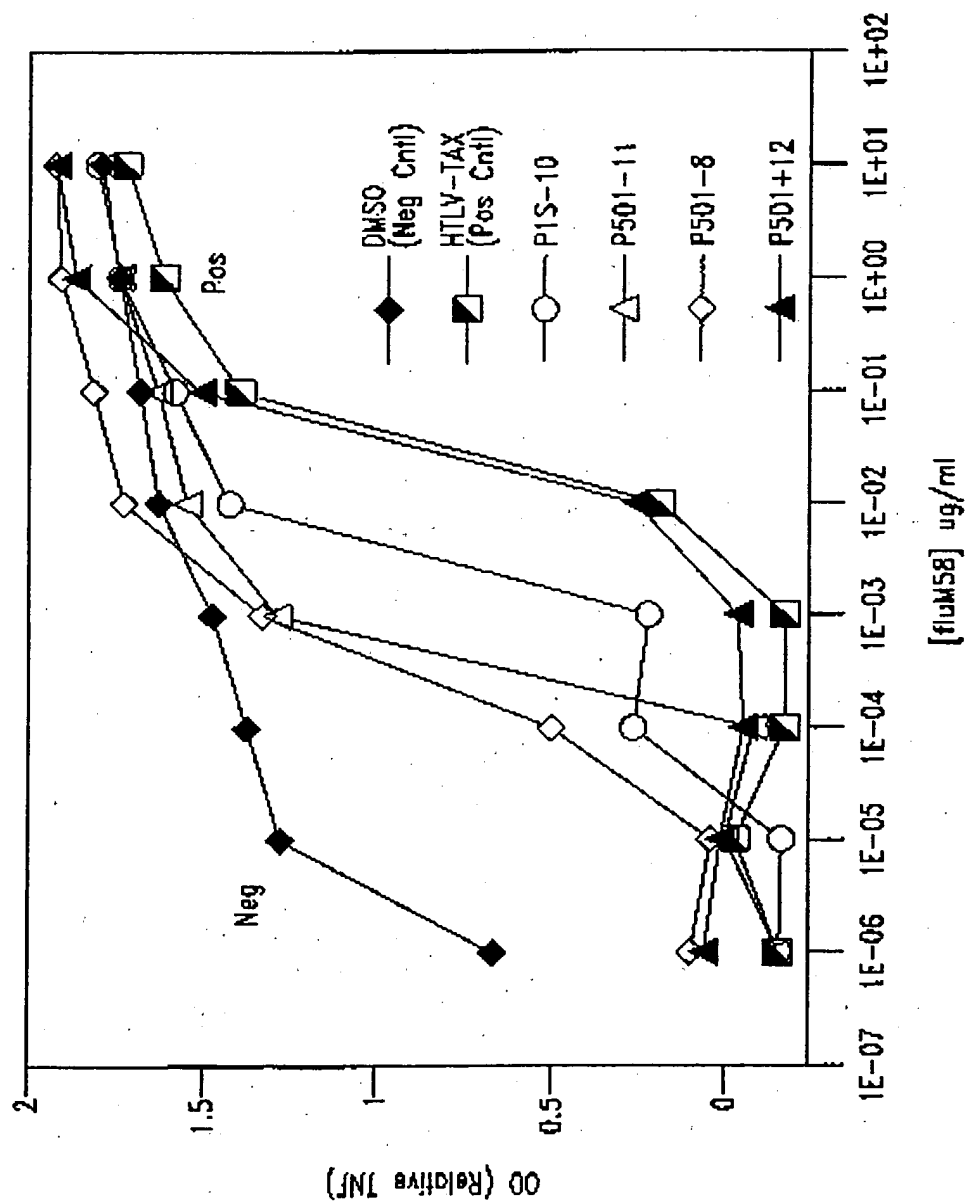
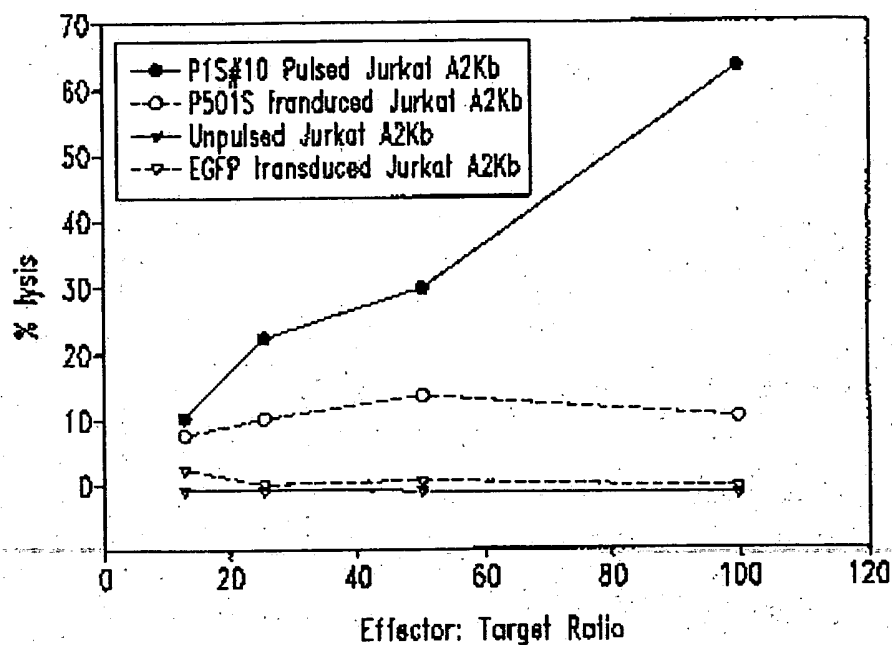
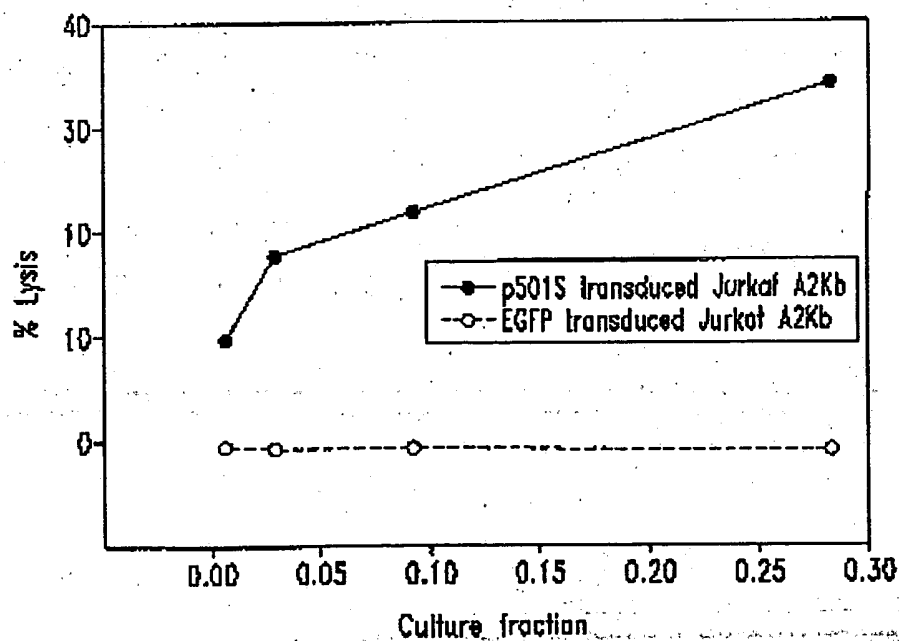
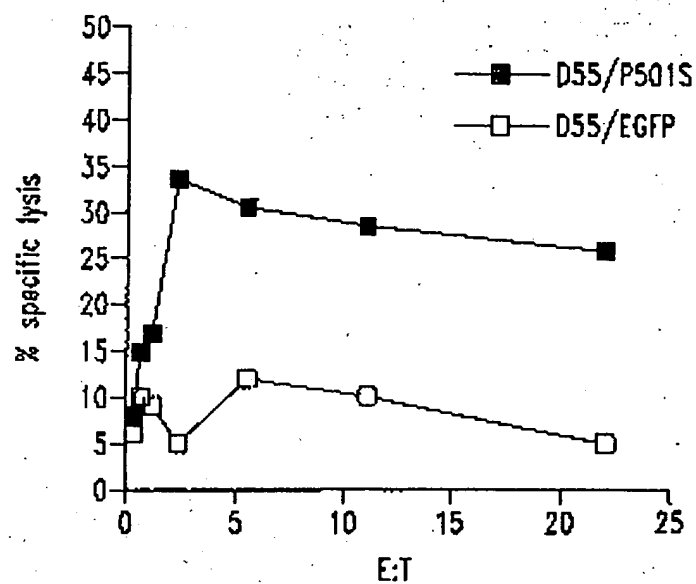
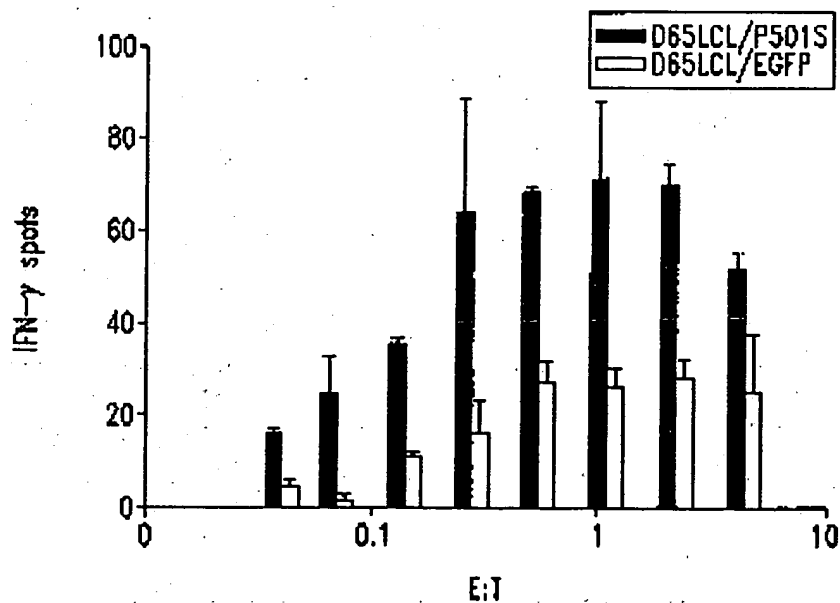
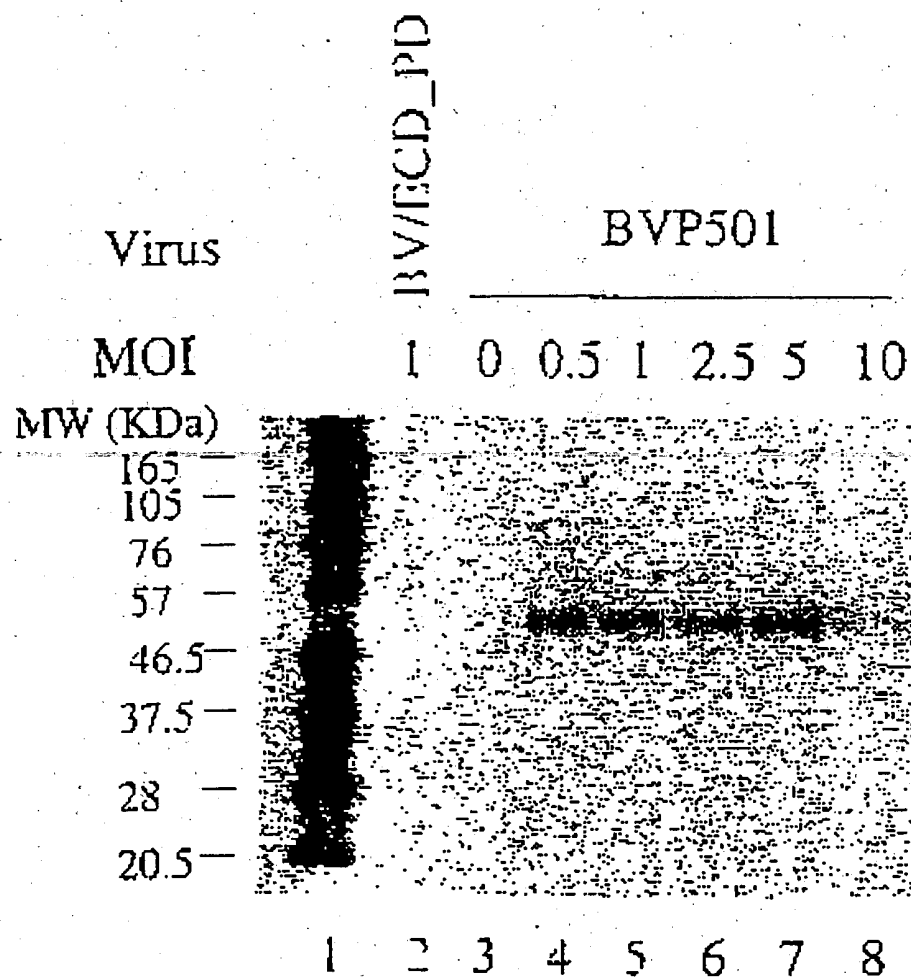


Fig. 3

*Fig. 4**Fig. 5*

*Fig. 6A**Fig. 6B*

Expression of P501S by the Baculovirus Expression System



0.6 million high 5 cells in 6-well plate were infected with an unrelated control virus BV/ECD_PD (lane 2), without virus (lane 3), or with recombinant baculovirus for P501 at different MOIs (lane 4 - 8). Cell lysates were run on SDS-PAGE under the reducing conditions and analyzed by Western blot with a monoclonal antibody against P501S (P501S-10E3-G4D3). Lane 1 is the biotinylated protein molecular weight marker (BioLabs).

Fig. 7

Figure 8. Mapping of the epitope recognized by 10E3-G4-D3

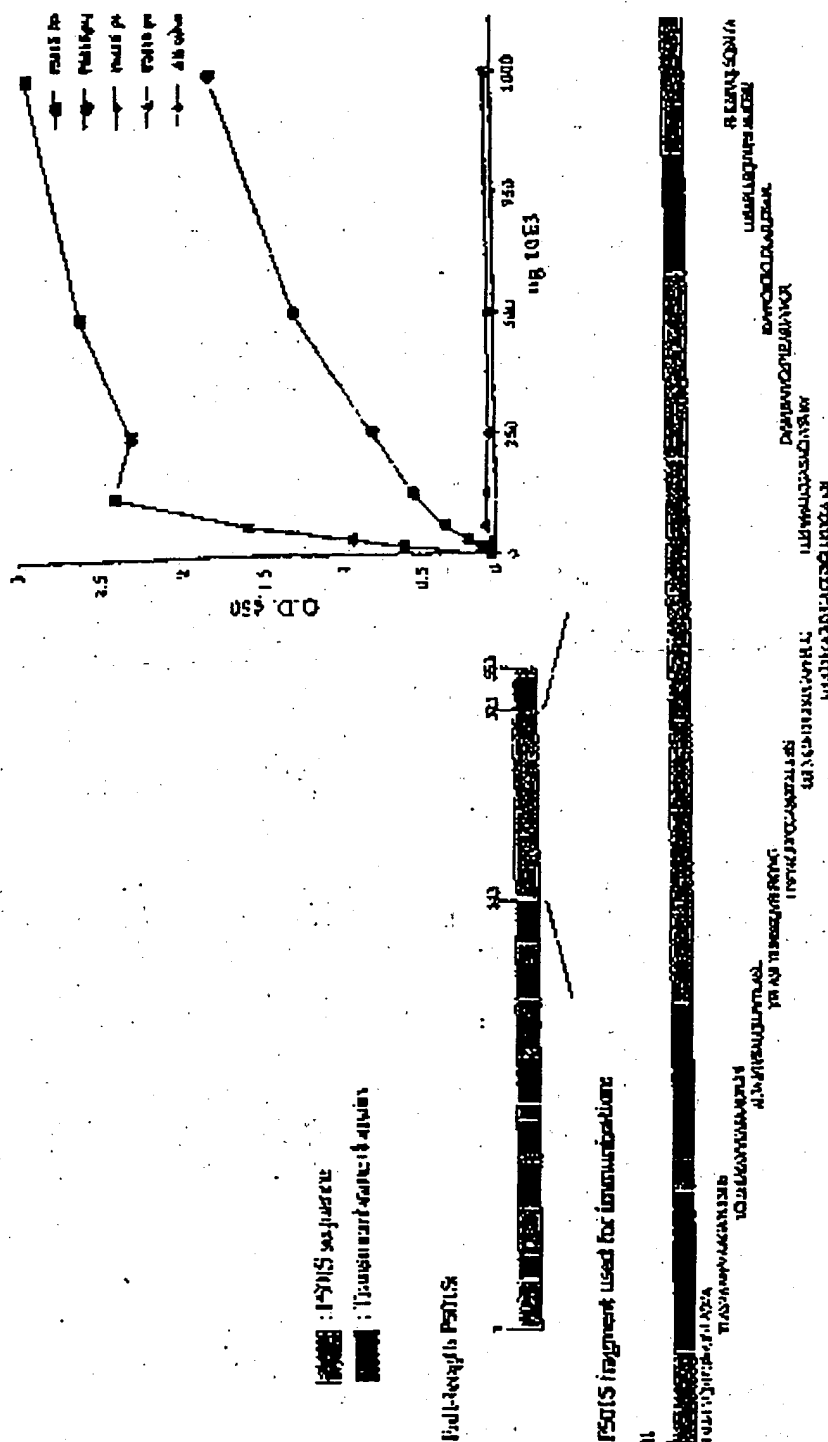


Fig. 8

Schematic of P501S with predicted
transmembrane, cytoplasmic, and extracellular regions

MVQRIWVSRLLRHK AQLLLVNLLTFGLEVCLAAGIT YVPPLLLEVGVEEKFM
TMVLGIGPVLGLVCYPLIGSAS

DHWGRGYGRRRP FIWALSGLILLSLFLIPRAGWL AGLLCPDPRPLE LALLILGVGLLDFCGQVCFTPL

EALLSDFRDPDHCRO AYSVAFMISLGGCLGYLLPAI DWDTSALAPYLGTOEE

CLFGLLTILFLTCAATLIIV AEEAALGPTEPAEGLSAPSLSPHCPCRRARLAFRNLGALLPRL

HQICGRMPRTERR LFVAELCSIMMALMTFTLEYTDF VGEGLYQGVPRAEFGTEARRHYDEGVR

MGSLGLFLQCAISLVFSLVM DRLVQRFQTRAVVLAS VAAFVVAAGATCLSHSVAVVTA SAA

LTGFTFSALQILPYTLASIY HREKQVFLPKYRGDTGGASSEDLSMTSFLPGPKPGAPFPNGHVGAGGSGL

LPPPPALCGASACDVSVRVVVGEPTEARVVPGRG ICLDLAILDSAFLLSQVAPSLF MGSIQVLSQS

VTAYMVSAAGLGLVAIFYAT QVVFQKSDLAKYSA

Underlined sequence: Predicted transmembrane domain; Bold sequence:
Predicted extracellular domain; *Italic sequence*: Predicted intracellular
domain. Sequence in bold/underlined: used generate polyclonal rabbit
serum

Localization of domains predicted using HMMTOP (G.E. Tusnady and I. Simon
(1998) Principles Governing Amino Acid Composition of Integral Membrane
Proteins: Applications to topology Prediction J.Mol Biol. 283. 489-506.

Fig. 9

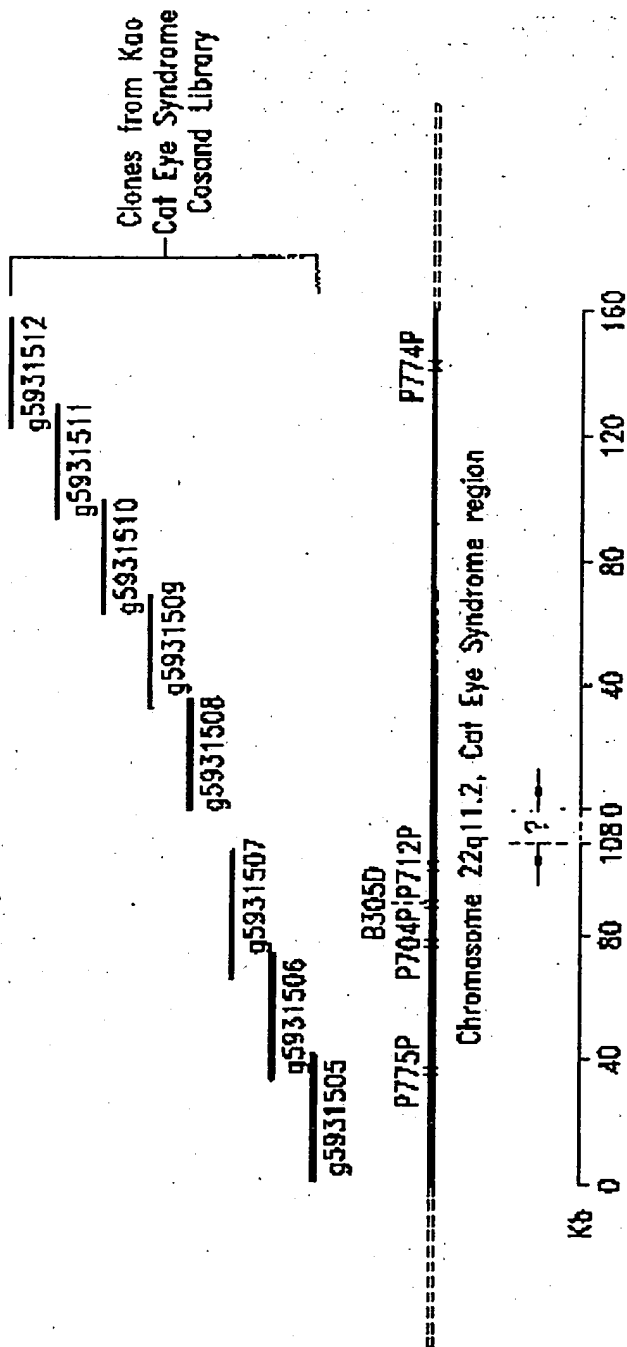


Fig. 10

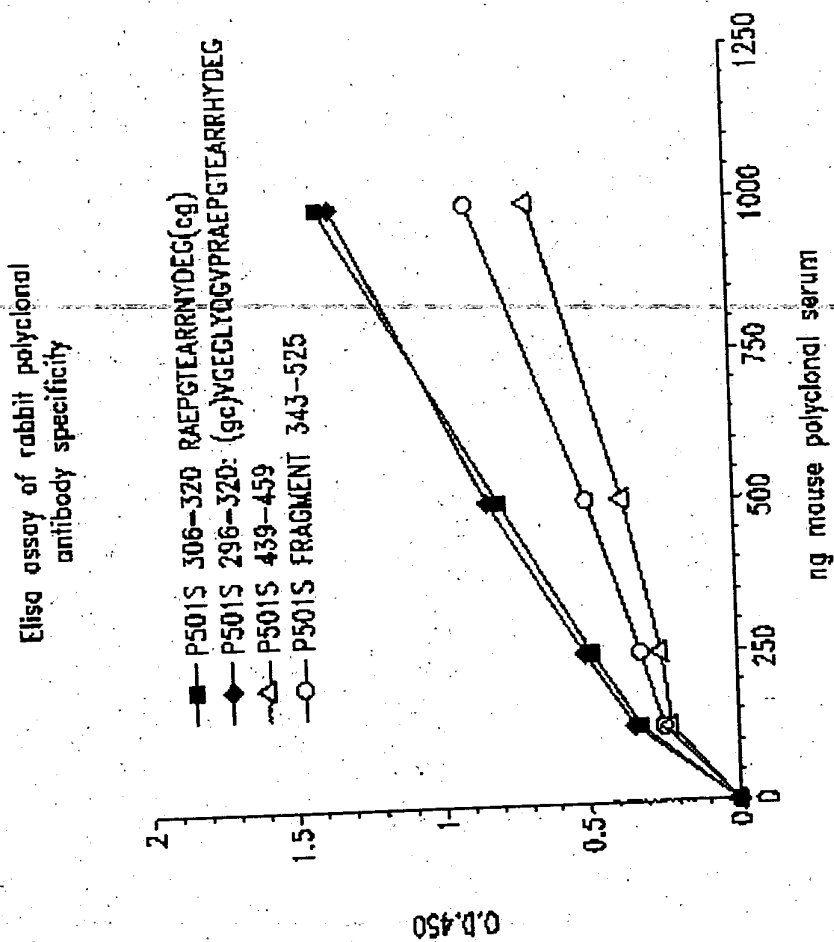


Fig. 11

SEQUENCE LISTING

<110> Corixa Corporation
 Xu, Jiangchun
 Dillon, Davin C.
 Mitcham, Jennifer L.
 Harlocker, Susan Louise
 Jiang Yuqiu
 Reed, Steven G.
 Kalos, Michael
 Fanger, Gary
 Retter, Mark
 Solk, John
 Day, Craig
 Skeiky, Yasir A.W.
 Wang, Aijun

<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND
 DIAGNOSIS OF PROSTATE CANCER

<130> 210121.42720PC

<140> PCT

<141> 2000-11-09

<160> 551

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> B14

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> 11)... (814)

<223> n - A,T,C or G

<400> 1

tttttttttt	tttttcacag	tataacagct	ctttatttct	gtgagttcta	ctagggaatc	60
atcaaatctg	aggggtgtct	ggaggacttc	aatacacctc	cccccctagt	gaatcagctt	120
ccaggggggc	cagtcacctc	cttctactta	tcccatccc	atgccaaagg	aagacctcc	180
ctccttggtc	cacagccttc	tctaggcttc	ccagtgcctc	caggacagag	tgggttatgt	240
tttcaatccc	atccttgctg	tgagtgtctg	gtgggttggt	ctcccaatcc	ctgctcagtg	300
cttcatgggc	agtgtccagc	acatgtcact	ctccactctc	tcagtgtgga	tccactagtt	360
ctagagcggc	cgccaccgag	gtggagctcc	agcttttgtt	cccttttagt	agggttaatt	420
ggcgcttggt	cgtaatcatg	gtcataactg	tttctgtgtg	gaaattgtta	tccgctcaca	480
attccacaca	acatacagag	cggaaagcata	aagtgttaag	cttggttggc	ctaattagtg	540
anctaatcca	cattaatgtc	gttggtctca	ctgncogctt	tccagtcnng	aaaactgtcg	600
tggcagctgc	attaatgaat	cggccaacgc	ncggggaaaa	ggggtttggg	ttttgggggc	660
tcttcgcttc	ctgctcact	nantcctgcg	ctcggtcttt	cgggtgcggg	gaacaggtatc	720
actcctcaaa	gnggttatta	cggttatccn	naaatcnngg	gatcccnngg	aaaaaanttt	780
aaacaaaggc	cancaaaagg	cngaaacgta	aaaa			814

<210> 2

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(816)

<223> n = A,T,C or G

<400> 2

acagaaatgt	tggatgggtgg	agcaacttttc	tatacgactt	acaggacagc	agatggggaa	60
ttcatggctg	ttggagcaat	agaaccccag	ttctaogagc	tgctgateaa	aggacttggg	120
ctaaagctctg	atgaacttcc	caatcagatg	agcatgggatg	attggccaga	aatgaagaag	180
aagtttgcag	atgtatttgc	aaagaagacy	aaggcagagt	ggtgtcaaat	ctttgacggc	240
acagatgoot	gtgtgactcc	ggttctgact	tttgaggagg	ttgttcatca	tgatcacaac	300
aaggaaoggg	gctcgtttat	caccagtgag	gagcaggacg	tgagcccccg	ccctgcaccc	360
ctgtgtttaa	acaccccagc	catcccttct	ttcaaaaggg	atccactagt	tctagaagcg	420
gcccaccacg	cggtggagct	ccagcttttg	ttcccttttag	tgaggggttaa	ttgcgcgctt	480
ggcgtaatca	tggtcatago	tgtttctgt	gtgaaattgt	tatcogetca	caattccccc	540
aacatacagag	coggaacata	aagtgttaag	cctgggggtgc	ctaagtantg	agctaactcn	600
cattaattgc	gttgcgttca	ctgcccgttt	tccagtcggg	aaaactgtcg	tgccactgcn	660
ttantgaatc	ngccaccccc	cgggaaaagg	cgggttgontt	tggggcctct	tacgctttcc	720
togctcattg	atcctngonc	coggtcttcg	gctgoggnga	acgggttcaat	cctcaaaggc	780
ggtntnccgg	ttatccccc	acnsggggata	ccnnga			816

<210> 3

<211> 773

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(773)

<223> n = A,T,C or G

<400> 3

cttttgaag	aagggatggc	tgggtgttt	aacagcagag	gtgcagggcg	ggggctcacg	60
tctgtctct	cactgggtgat	aaacagagccc	cgttccctgt	tgtgatcatg	atgaacaacc	120
tctcacaag	tcagaacccg	agtacacag	gcactctgtg	cgtcaagat	ttgacaccac	180
tctgccttcg	tcttctttgc	aaatacatct	gcaaaacttct	tcttcatctc	tggecaatca	240
tccatgctca	tctgattggg	aagttcatca	gactttagtc	cannctcttt	gatcagcage	300
togtagaact	gggtttctat	tgtctcaaca	gccatgaatt	ccccatctgc	tgtcctgtaa	360
gtcgtataga	aaggtgctcc	accatccaac	atgttctgtc	ctcgaggggg	ggcccggtac	420
ccaattcgcc	ctatantgag	tgttattacg	cgcgctcact	ggcgcgtcgt	ttacaacgtc	480
gtgactggga	aaacccctggg	cgttaccaac	ttaatcgct	tgacgracat	ccccctttcg	540
ccagctgggc	gtaatanoga	aaaggccogc	accgatcgcc	cttccaacag	ttgogcacct	600
gaatgggnaa	atgggacccc	cctgttaaccg	cgcattnaac	cccccgnggg	tttngttgtt	660
accccccant	nnacrgctta	cactttgcca	gcgccttanc	gcrcgctccc	tttnccttt	720
cttcccttcc	tttncnccn	atttccccg	gggtttcccc	cntcaaaccc	ena	773

<210> 4

<211> 828

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(828)

<223> n = A,T,C or G

<400> 4

cctectgagt	cctactgacc	tgtgctttct	ggtgtggagt	ccagggtgtc	taggaanaagg	60
aatgggcaga	cacaggtgta	tgccaatggt	tctgaaatgg	gtataatttc	gtcctctcct	120
tgggaacact	ggctgtctct	gaagactttc	pgctcagttt	cagtggaggac	acacacaaag	180
acgtgggtga	ccatgttggt	tgtgggggtc	agagatggga	ggggtggggc	ccaccctgga	240
agagtggaca	gtgacacaag	gtggacactc	tctacagatc	actgaggata	agctggagcc	300
acaatgcacg	aggcacacac	acagcaagga	tgacnctgta	aacatagccc	acgtgtcctc	360
gnngggcactg	ggaagcctan	atnaggccgt	gagcansaag	aaggggagga	tccactagtt	420
ctanagcggc	cgccaccgog	gtgganctcc	anccttttgt	cccttttagtg	agggttaatt	480
gogcgcttgg	cntaatcatg	gtcatanctn	tttctctgtg	gaaattgcta	tcogctcaca	540
attccacaca	acatacgaac	cggaaacata	aantgtaaac	ctgggggtgcc	taatgantga	600
ctaactcaca	ttaattgcgt	tgcgtcactc	gcccgttttc	caatcnggaa	acctgtcttg	660
ccncttgcat	tnatgaatcn	gccaaacccc	ggggaaaagc	gtttgcgttt	tgggcgctct	720
tccgcttccct	cncctantta	ntccctnccn	tcggtcattc	cggtcgngc	aaaccgggtc	780
accncccca	aagggggtat	cccggtttcc	cenaatccgg	gganancc		828

<210> 5

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (834)

<223> n = A,T,C or G

<400> 5

tttttttttt	tttttactga	tagatggaat	ttattaagct	tttcacatgt	gatagcacat	60
agtttttaatt	gcatacaaa	tactaacaag	aactctagca	atcaagaatg	gcagcatggt	120
atttttataac	aatcaacacc	tgtggctttt	aaaatttggg	tttcataaga	taattttatac	180
tgaagtaaat	ctagccatgc	ttttaaaaaa	tgcttttaggt	cactccaagc	ttggcagtta	240
acatttgga	taaaacaata	taaaacaatc	acaatttaat	aaataacaaa	tacaacattg	300
tagggcataa	tcatafacag	tataaggaaa	aggttgtagt	gttgagtaag	cagttattag	360
aatagaatac	cttggcctct	atgcaaatat	gtctagacac	tttgattcac	tcagccctga	420
cattcagttt	tcaagtagg	agacagggtc	tcacgtatca	ttttacagtt	tcraacacat	480
tgaaaacaag	tagaaaatga	tgagttgatt	tttattaatg	cattacatcc	tcaagagtta	540
tcaccaaccc	ctcagttata	aaaaattttc	aagttatatt	agtcataata	cttgggtgtgc	600
ttattttaaa	ttagtgttaa	atggattaag	tgaagacaa	aatgggtccc	taatgtgatt	660
gatattggto	atttttacca	gtttctaaat	ctnaactttc	aggtttctga	actggaacat	720
tgnatocag	tgttccanag	ctncaacctc	ctggacatt	acagtgtgct	tgattcaaaa	780
tgttattttg	ttaaaactta	aatttttaac	tgggtggaaa	ataatttgaa	atna	834

<210> 6

<211> 818

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (818)

<223> n = A,T,C or G

<400> 6

tttttttttt	tttttttttt	aagaccctca	tcaatagatg	gagacataca	gaantagtea	60
aaccacatct	acaaatgcc	agtatcaggc	ggcggctctg	aagccaaagt	gatgtttgga	120
tgtaaagtga	aattattagt	ggcggatgaa	gcagatagtg	aggaaagtgg	agccaataat	180
gacgtgaagt	cogtggaaag	ctgtggctac	aaaaaatgtt	gagccgtaga	tgcoytogga	240
aatgggtgaag	gggagctcga	agtactctga	ggcttctagg	agggtaaaat	agagaccag	300

taaaaactgtga	ataagcagtg	cttgaattat	ttgggttcgg	ttgttttcta	ctagactatg	360
gtgagctcag	gtgattgata	ctcctgatgc	gagtaatacg	gatgtgttca	ggagtgggac	420
ttctagggga	tttagcgggg	tgatgcctgt	tgggggccag	tgcctccta	gttggggggt	480
aggggctagg	ctggagtggg	aaaaggctca	gaaaaatcct	gcgaagaaaa	aaacttctga	540
ggtaataaat	aggattatcc	cgtatcgaag	gccttttttg	acagggtggt	tgtggtggcc	600
ttgggtatgt	ctttctctgt	ttacatcgcg	ccatcattgg	tatatggtta	gtgtgttggg	660
ttantanggc	ctantatgaa	gaacttttgg	antggaatta	aatcaatngc	ttggccggaa	720
gtcattanga	nggcnaaaa	ggcctgttca	ngggctcggg	ctnggtttta	ccnaccat	780
ggaatncccc	ccccggacna	ntgnatccct	attcttaa			818

<210> 7

<211> B17

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{B17}

<223> n = A,T,C or G

<400> 7

tttttttttt	tttttttttt	tggtctctaga	gggggttagag	gggggtgctat	agggttaaata	60
cgggccctat	ttcaagatc	tttaggggaa	ttaattctag	gacgatgggt	atgaaactgt	120
ggtttgcctc	acagatttca	gagcattgac	cgtagtatac	ccccggctgt	gtagcgggtga	180
aagtggtttg	gttttagacgt	cggggaattg	catctgtttt	taagcctaata	gtggggacag	240
ctcatgagtg	caagacgtct	tgtgatgtaa	ctattatacn	aatggggsgt	tcaatogsga	300
gtactactcg	attgtcaacg	tcaaggagtc	gcagggtcgcc	tggttctagg	aataatgggg	360
gaagtatgta	ggaattgaag	atkaatccgc	cgtagtccgt	gttctctctag	gttcaatacc	420
attggtggcc	aattgatttg	atggttaagg	gagggatcgt	tgaactcgtc	tgttatgtaa	480
aggtatccct	ngggatggga	aggnatnaa	ggaetangga	tnaatggcgg	gcangactatt	540
tcaaacngtc	tctanttcct	gaaacgtctg	aaatgttaat	aaanaattaan	tttngttatt	600
gaatnttng	gaaaagggct	tacaggacta	gaaaccaaata	angaaaanta	atnntaangg	660
ctttatctnt	aaaggtmata	accnctccta	tnatcccacc	caatngnatt	ccccacnccn	720
acnattggat	ccccanttc	caanaanggc	cnccccggg	tgnannccno	cttttyttcc	780
cttnantgan	ggttattcnc	ccctngcctt	atcance			817

<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{799}

<223> n = A,T,C or G

<400> 8

catttccggg	tttactttct	aaggaaagcc	gagcgggaagc	tgcataacgtg	ggaatcgggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	vgtcccagaa	ggtggacttg	gcactgaaac	agctgggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagogg	gaggtccagc	agtgtagccg	cgtcctgggg	240
tgggtggcgg	angcctganc	cgtcttgcct	tgtgtccccc	angtggggcg	ccaccccctg	300
acctgcctgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggatttttgc	cctanantaa	ggctcatctg	ggcctogggc	ccccacccctg	gttggccttg	420
tctttgagnt	gagcccctat	tccatctggg	ccaactgtcng	gaccacccctt	ngggagtggt	480
ctccttacia	ccacannatg	ccccgtccct	ccgggaaccc	antcccance	tnggaaggat	540
caagncctgn	atccactnnt	netanaacog	gcncncncog	cngtggaaac	cnccttntgt	600
tcttttctnt	tnagggttaa	ctnncgcttg	gccttnccan	ngtccctnnc	nttttccnnt	660

gttnaaattg ttangncccc neennntccm ennnnnnnan cccgacccnn annttnnann 720
 neetgggggt neennngat tgaccenncc neettntant tgcttnggg nncnntgccc 780
 cttccctct nggganncg 799

<210> 9

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 9

acgccttgat cctcccaggg tgggactggt tctgggagga gccgggcatg ctgtgggttg 60
 taangatgac actcccaag gtggtcctga cagtggccca gatggacatg gggctcacc 120
 caaggacaag gccaccaggt gcgggggccc aagcccatat gatccttact ctatgagcaa 180
 aatccctgtt gggggcttct ccttgaagtc ogccancagg gctcagtctt tggaccang 240
 caggtcattg ggttgtnnc caactggggg ccccaacgca aaanggcna gggcctcngn 300
 caccatccc angacgggg tacactnctg gacctccmc tccaccactt tcatgctgtg 360
 ttctacccy cgnatntgtc ccanctgttt cngtgcenac tccancttct nggacgtgcy 420
 ctacatacgc ccgyantcnc nctccogctt tgtccctatc cactnccan caacaaattt 480
 cncntantg caccnatcc cacttttmc agntttccnc nncngcttc ctntaaaaag 540
 ggttgancce cggaaaatnc cccaaaaggg gggggccngg taccacaactn cccctnata 600
 gctgaantcc ccatnaccnn gnetcnatgg anccntccnt ttttaannacn ttctnaactt 660
 gggaaanacc ctognccntn ccccnntaa tcccncttg cnangnncnt ccccnntcc 720
 nccnnntng gentntann cnaaaaaggg cccnnaacaa tctctnncn cctcanttgg 780
 ccanccctcg aaatcgccn c 801

<210> 10

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(789)

<223> n = A,T,C or G

<400> 10

cagtctatnt ggccagtgtg gcagctttcc ctgtggctgc cgggtgccca tgcctgtccc 60
 acagtgtggc cgtggtgaca gcttcagcgc cctcaccgg gtccaccttc tcagccctgc 120
 agatcctgac ctacacactg gcctccctct accaccggga gaagcaggty ttcctgacca 180
 aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttctgc 240
 caggccctaa gcctggagct ccttcccta atggacacgt ggtgctgga ggcagtggcc 300
 tgcctccacc tccaccogcy ctctgogggg cctctgcttg tgatgtctcc gtacgtgtgg 360
 tggtaggtga gcccacgan gccagggtgg ttccggggcg gggcatctgc ctggacctcg 420
 ccactctgga tagtgccttc tgcgtgccc ngtggcccca tccctgttta tgggtccat 480
 tgtccagctc agccagcttg tcaactgcta tatgggtgtc gcgcaggcc tgggtctggt 540
 cccatttact ttgctacaca ggtantattt gacaagaacg anttggccaa atactcagcy 600
 ttazaaaatt ccagcaacat tgggggtgga aggcctgcct cactgggtcc aactcccgco 660
 tctgttaac cccatggggc tgcgggcttg gcgcgaatt tctgttctg ccaantnat 720
 gtggctctct gctgccacct gttgttggct gaagtgcnta cngcncanct nggggggtng 780
 ggggttccc 799

<210> 11

<211> 772

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(772)

<223> n = A,T,C or G

<400> 11

```

cccacccctac ccaaatatta gacaccaaca cagaaaagct agcaatggat tcccttctac      60
tttgittaast aaataagtta aatattttaa tgccctgtgtc tctgtgatgg caacagaagg      120
accaacagggc cacatccctga taaaaggtaa gaggggggtg gatcagcaaa aagacagtgc      180
tgtgggctga ggggacctgg ttcttgtgtg ttgcccctca ggaactcttc cctacaaata      240
actttcatat gttcaaatcc catggaggag tgtttcatcc tagaaactcc catgcaagag      300
ctacattaaa cgaagctgca ggttaagggg cttanagatg ggaaaccagg tgactgagtt      360
tattcagctc ccaaaaapcc ttctctaggt gtgtctcaac taggaggcta gctgttaacc      420
ctgagcctgg gtaatccacc tgcagagtcc ccgcattcca gtgcattgaa cctttctggc      480
ctccctgtat aagtccagac tgaacacccc ttggaaggnc tccagtccag cagccctana      540
aactggggga aaaagaaaag gaagcccccac ccccagctg tgcactacg cactcaaca      600
gcacagggtg gcagcaaaa aaccacttta ctttggcaca acaaaaaact ngggggggca      660
accccggtac cccnangggg gttaacagga ancnnggnaa cntggaacce aattnaggca      720
ggcccnccac ccnaatntt gctgggaant ttttctctcc cttaattntt tc      772

```

<210> 12

<211> 751

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(751)

<223> n = A,T,C or G

<400> 12

```

gccccaattc cagctgccc accaccccag gtgactgcat tagttoggat gtcatacaaa      60
agctgattga agcaacctc tacttttttg tegtgaacct ttgtcttggg gcagggttca      120
ttgtctgtgt tegtgaagtt gtcattgcaa cagaatgggg gaaaggcact gttctctttg      180
aagtanggtg agtcccaaaa atccgtatag ttgtgaagc cacagcaott gagcccttcc      240
atggttgggt tcacacttg agtgaagctc tccgtgggac cataatcttt ctctgatggc      300
ggcactacca gcaacgtcag ggaagtgcct agcccttctg gtgtacacca aggcgaccac      360
agcagctgcn accctagcaa tgaagatgan gagganatg asgaagaacg tcncgagggc      420
acaattgctc tcagtcttan caccatanca gcccntgaaa accaananca sagaccacna      480
cncgggtgct gatgaagaaa tnaccocncg ttgacaaaact tgcattggcac tggganocac      540
agtggcccca aaaatcttca aaaaggatgc cccatcnatt gaccccccaa atgcccactg      600
ccaacagggg ctgccccacn cncnnaacga tgancenatt gnacaagatc tncntggctc      660
tnatnaacnt gaacctgcn tngtggctcc tgttcaggnc cnnnggctga cttctnaann      720
aangaactcn gaagnccca cngganannc g      751

```

<210> 13

<211> 729

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(729)

<223> n = A,T,C or G

<400> 13.

gagccaggcg	ccccctctgcc	tgcccactca	gtggcaacac	ccgggagctg	ttttgtcctt	60
tgtggancct	cagcagtncc	ctctttcaga	actcantgcc	aaganccttg	aacaggagcc	120
accatgcagt	gcttcagctt	cattaagacc	atgatgater	tcttcaattt	gctcatcttt	180
ctgtgtggtg	cagccctggt	ggcagtgggc	atctgggtgt	caatcgatgg	ggcatccttt	240
ctgaagatct	tcgggccact	gtcgtccagt	gccatgcagt	ttgtcaacgt	gggctacttc	300
ctcatcgtag	ccggcgcttg	ggctcttagct	ctaggcttcc	tgggctgcta	tgggtctaag	360
actgagagca	agtgtgccc	ogtgaogtgc	ttcttcatcc	tcctcctcat	cttcattgct	420
gaggttgcaa	tgctgtggtc	gccttggtgt	acaccacaat	ggctgagcac	ttcctgagct	480
tgtgtgaat	gcctgccatc	aanaaaagat	tatgggttcc	caggaanact	tcactcaagt	540
gttggaacac	cacctgaaa	gggtcgaagt	gctgtggctt	cnnccaaacta	tacggatttt	600
gaagantcac	ctacttcaaa	gaaaaanagt	cctttccccc	atctctgttg	caattgacaa	660
acgtcccaaa	cacagccaat	tgaaaacctg	cacccaaccc	aaangggctc	ccaaccanaa	720
attnaaggg						729

<210> 14

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (816)

<223> n = A,T,C or G

<400> 14

tgctcttctt	caaggttggt	cttgttgcca	taacaaccac	cataggttaa	gcgggcgcag	60
tgctcgctga	aggggttgta	gtaccagcgc	gggatgctct	ccttgccagag	tcctgtgtct	120
ggcagggtcca	cgcagtgccc	tttgtcactg	gggaatggga	tgcgctggag	ctcgtcaaaag	180
ccactogtgt	atctttcaca	ggcagcctcg	tcgacgcgtg	cggggcagtt	gggggtgtct	240
tcacactcca	ggaaactgtc	natgcagcag	ccattgctgc	agcggaaactg	ggtgggctga	300
cangtgcag	agcacactgg	atgggcgctt	tcctatgnan	gggcccctgng	ggaaagtccc	360
tganccecan	anctgcctct	caaaagcccc	accttgacca	ccccgacagg	ctagaatgga	420
atcttcttcc	cgaagggtag	ttnttcttgt	tgcrcaancc	ancccntaa	acaaactctt	480
gcantcttgc	tcggnggggg	tcntantacc	anogtgggaa	aagaacccca	ggcngcgaaac	540
caancttggt	tggatncgaa	gcataatct	ncntttctgc	ttggtggaca	gcaccantna	600
ctgtcnnant	ctagnccttg	gtcctcntgg	gttgnccttg	aacctaatcn	ccnntcaact	660
gggacaaggt	aanngccnt	cctttnaatt	ccnancntn	ccccctggct	tgggggttttn	720
cncnctcta	ccccagaaan	ncgtgttcc	cccccaacta	ggggccnaaa	ccnntnttcc	780
cacacacctn	ccccacccac	gggttongnt	ggttng			816

<210> 15

<211> 783

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (783)

<223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacaccccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgctactgc	ggggtgacac	ggatgtcagg	gtagagagga	120
aagaccocaa	ccaggtggaa	ctgtggggac	tcaagggaang	caactacctg	ttccagctga	180
cagtgcactag	ctcagaccac	ccagaggaca	cggccaaagt	cacagtcact	gtgtgttcca	240
ccaagcagac	agaagactac	tgcctngcat	ccaacaangt	gggctgctgc	cggggctctt	300
tcccacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttctgt	tatggaggct	360

```

gcttgggcaa caagaacaaac taccttcggg agaagagt cattctance tgcnggggtg 420
tgcaagggtg gcccttgana ngcanctctg gggctcange gactttccce cagggccct 480
ccatggaaag ggcgcaccca ntgttctctg gcacctgtca gccacccrag ttccgctgca 540
ncaatggctg ctgcacacac ancttctctg aattgtgaca acacccccca ntgcacccaa 600
ccctcccaac aaagcttccc tgttnaaaaa taacccantt ggtttttnac aaacnccog 660
cncctccntt tcccccnntn aacaaagggc nctngcnitt gaactgccc naccnnggaa 720
tctnccnngg aaaaantncc cccctcggtt cctnnaance cctccnnaaa anctncccc 780
ccc 783

```

<210> 16

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 16

```

gccccaatc cagctgcac accacccag gtgactgcat tagttcggat gtcatacaaa 60
agctgattga agcaacccctc tacttttttg tcttgagact ttgtgttgt gcagggttca 120
ttggctgtgt tggtagctt gtcattgcaa cagaatgggg gaaaggcact gttctctttg 180
aagtaggggt agtctcaca atccgtatag ttggtgaagc cacagcactt gagccctttc 240
atggtggtgt tccacacttg agtgaagtct tcttgggaac catactcttt ctgtatggca 300
ggcaactacca gcaagctcag gaagtgtca gccattgttg tgtacacca ggccaccaca 360
gcagctgcaa cctcagcaat gaagatgagg aggaggatga agaagaaagt cnogagggca 420
cacttgctct ccgtcttagc accatagcag cccangaaac caagagcaan gaccacaacg 480
ccngetgcga atgaaagaaa ntacccacgt tgacaaactg catggccact ggacgacagt 540
tgsgccgaan atcttcagaa aagggatgac ccatcgattg aacacccana tgcctactgc 600
cnacagggct gcnccnncn gaaagaatga gccattgaag aaggatcttc ntggtcttaa 660
tgaaactgaa ccttgcatgg tggccctctg tcagggctct tggcagtgaa ttctganaaa 720
aaggaaacngc nttagcccc ccaangana aaacaccccc gsggtgttgc ctgaattggc 780
ggccaaggan cctgcccnc g 801

```

<210> 17

<211> 740

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(740)

<223> n = A,T,C or G

<400> 17

```

gtgagagcca ggggtccctc tgcctgccc ctcagtggca acaccogga gctgttttgt 60
cctttgtgga gctcagcag ttccctcttt cagaactcac tgccaagagc cctgaacagg 120
agccaccatg cagtgtctca gcttcattaa gaccatgatg atcctcttca atttgetcat 180
ctttctgtgt ggtgcagccc tgttggcagt gggcatctgg gtgtcaatcg atggggcacc 240
ctttctgaag atcttcgggc cactgtctgc cagtgccatg cagtttgtca acgtgggcta 300
cttctctatc gcagccggcg ttgtggtctt tgccttttgt ttcttgggt gctatgggtg 360
taagacggag agcaagtgtg cctctgtgac gttctctctc atcctctctc tcatctctat 420
tgctgaagtt gcagctgtg tggctgcctt ggtgtacacc acaatggctg aaccattcct 480
gacgttgctg gtantgctg ccataaanaa agattatggg ttcccaggaa aatttctctc 540
aanttgga caccnccatg aaaaaggctc caattctctg tggcttcccc aactataacc 600
gaatttggaa agantcnc cacttccaaa aaaaaanant tgccttttnc cctnttctgt 660
tgcaatgaaa acntcccaan acngccaatn aaaacctgac cnnncaaaaa ggentcncaa 720

```

caaaaaaaaaant nnaagggttn

740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(802)
 <223> n - A,T,C or G

<400> 18
 ccgctgggttg cgtgggtcca gngnagccac gaagcagctc agcatacaca gcctcaatca 60
 caaggtcttc cagctgccgc acattacgca gggcaagagc ctccagcaac actgcataatg 120
 ggatacactt tacttttagca gccagggtga caactgagag gtgtcgaagc ttattctctt 180
 gaggctctgt tagtggagga agattccggg cttcagctaa gtatgcagcg tatgtccrat 240
 aagcaaacac tgtgagcagc cggaaaggtag aggcagaagc actctcagcc agctctctaa 300
 cattgggcat gtcacagcagc tctccaaaca cgtagacacc agnggcctcc agcaccctgat 360
 ggatgagtggt ggcacagcgt gccccttgg cgcacttggc taggagcaga aattgtctct 420
 ggttctgccc tgtaccttc acttcgcac tcatcactgc actgagtgtg ggggacttgg 480
 gctcaggatg tccagagacg tggttccgcc cctcncctta atgacacccn ccanncaacc 540
 gtcggctccc gccagantgng ttogtctgnc ctgggtcagg gtctgtctggc cncacttgc 600
 aancttctgc nggccatgg aattcaccnc accggaactn gtangatcca ctnttctat 660
 aaccggncgc caccgcnmtt ggaactccac tcttnttccc ttacttgag ggttaagggtc 720
 accctttnog ttaccttggc ccaaacctn cntgtgtcg anattngtnaa tcnngnccna 780
 tncacccnc atangaagc ng 802

<210> 19
 <211> 731.
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(731)
 <223> n - A,T,C or G

<400> 19
 cnaagcttcc aggtnacggg ccgcnaance tgaccnagg tancanaang cagncngcgg 60
 gagecccccg tcaegnngng gngtctttat nggagggggc ggagccacat cnetggacnt 120
 cntgacccca actcccncc ncnantgca gtgatgagtg cagaactgaa ggtnacgtgg 180
 caggaaacca gancaaannc tgetccnntc caagtoggcn nagggggcgg ggctggccac 240
 gmcacccnt cnagtgtgtn aaagcccnnc cctgtctact tgtttggaga acngcnnga 300
 catgcccagn gttanataac nggcnagagag tnannttgc tctcccttcc ggctgogcan 360
 cngntntgct tagnggacat aacctgarta cttaactgaa ccrnngaate tncnccct 420
 ccactaagct cagaacaaaa aacttcgana ccactcantt gtcacctgnc tgcdaagta 480
 aagtgtaccc catnccaat gtntgctnga ngetctgncc tgcnttangt tgggtcttgg 540
 gaagacctat caattnaagc tatgtttctg actgcctctt gctccctgna acaancnacc 600
 cnnccntcca agggggggnc ggcccccacat ccccccaccc ntnaattnan ttancccn 660
 ccccnngggc cggcctttta cnancntenn nnaaggggna aaacnnngc tttncccaac 720
 nnaatccnc t 731

<210> 20
 <211> 754
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(754)
 <223> n = A,T,C or G

<400> 20
 tttttttttt tttttttttt taaaaacccc ctcacatnaa tgnaaacttc cgaaattgtc 60
 caaccccccc ntccaaatnn ccncttcggg gnggggggttc caaacccaan tcanntttgg 120
 annttaaatt aaatnttntt tggnggmnna anccnaatgt nangaaagt naacccanta 180
 tnancttnaa tncctggaaa ccngtngntt ccaaaaatnt ttaaccotta antcoctcog 240
 aaatngttta nggaaaaccc aanbtctent aaggttggtt gaaggntnaa tnaaaanccc 300
 nnccaattgt ttttngccac gcctgaatta attggnttcc gntgttttcc nttaaaanaa 360
 ggnnancccc gggtantnaa tccccccnnc cccaattata coganntttt ttingaattgg 420
 gancnccggg gaattaacgg ggnnnntccc tnttgggggg cngggncccc cccnccggg 480
 ggttngggnc aggnccnaat tgtttaaggg tccgaaaaat cccctcnaga aaaaaanctc 540
 ccaggntgag nntnggggtt nccccccccc canggccccc ctognanagt tgggggttgg 600
 ggggacctgg atttcttttc ccttnttnc tccccccccc cngggganag aggttngagt 660
 tttgtcnncc ggccccnccn aaganctttn coganntnan ttaaatccnt gcctnggcga 720
 agtccnttgn agggntaaan ggccccctnn cggg 754

<210> 21
 <211> 755
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(755)
 <223> n = A,T,C or G

<400> 21
 atcancat gacccnaac nngggaccnc tcancggnc nnnenaccnc cggecnatca 60
 nngtnagnnc actnccnttn naccacnccc cccnactac gcccnananc cnacgcncta 120
 nncanatncc actganngcg cganngtnan ngagaaanct nataccanag nccanacan 180
 ccagctgtcc nanaangcct nnnatacngg nnnatccaat ntgnanctc cnaaglattn 240
 nncnncanat gattttccctn anccgattac ccntncccc tanccectcc cccccaacna 300
 cgaaggcnc ggnccnaagg nngcgnccc ccgtagntc ccnncnaagt cncncccta 360
 aactcancn nattacnccg tctntgagta tcaactcccg aatctcacc tactcaactc 420
 aaaaanatan gatacaaat aatncaagcc tgnattatna actntgactg ggtctctatt 480
 ttagnngtcc ntnaanctc ctaatacttc cagctnccct tcnccaattt cnaanggct 540
 ctctcngaca gcantttttg gttcccnntt ggggtcttan ngaattgccc tctntngaac 600
 gggctctctt tttccttggg ttancctggg tcnncccggc cagttattat tcccnntttt 660
 aaattctncc cttttanttt tggntttna aacccccggc cttgaaaacy gccccctggg 720
 aaaaggttgt tttganaaaa tttttgtttt gtccc 755

<210> 22
 <211> 849
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(849)
 <223> n = A,T,C or G

<400> 22
 tttttttttt tttttangtg tngtctgca ggtagaggct tactacaant gtgaanacgt 60
 aogctnggan taangcgacc cganntctag gannccccc aaaaatcanac tgtgaagatn 120

atcctgnma	oggaanggtc	acggnggat	nttgctaggy	tgneenctec	cannnenttn	180
cataactcng	nggcctgce	caccaccttc	ggcgccccng	ngnccgggce	cgggtcattn	240
gnnttaacn	cactnngcna	nccgtttccn	ncccnncng	accnnggcga	tcoggggtnc	300
tctgtcttc	cctgnagncn	anaaantggg	ccnccgncce	ctttaaccct	nnacaagcca	360
cngccteta	nccnccgccc	ccctccant	nngggggact	gcnanngct	cggtnctng	420
nnaccccnm	gggtncctcg	gttgctegant	cnaccgnang	ccanggatc	cnaagggaagg	480
tgcgttnttg	gcccctacec	ttcgtctnccg	nncaaccttc	cggacnanga	nccgtcccg	540
cnennccng	cctnccctcg	caacacccgc	netctctngt	nccgnnnccc	ccccaccgc	600
nccctcnnc	ngnccnancn	ctccnccncc	gtctcannca	ccaccctgce	ccgccaggcc	660
ntcanccacn	ggngacnng	nagcncntc	gcnccgogcn	gcnccnccct	cgcncngaa	720
ctnctcnng	ccantnccgc	tcaanccnna	cnaaacgccc	ctgcgcccgc	cgnagcgncc	780
nccctcnnga	gtctcccg	cttcnacc	angnttccn	cggggacacn	nnaccccgcc	840
nnccngcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (872)

<223> n = A, T, C or G

<400> 23

gcgcgaacta	tacttcgctc	gnactcgtgc	gcctcgtctc	tcttttccctc	cgcaaccatg	60
tctgacnanc	cagattnggc	ngatctcnan	aagntoganc	agtcacaaact	gantaacaca	120
catacnncan	aganaaatcc	nctgccttcc	anagtanaen	attgaaenng	agaaccangc	180
nggcgaatcg	taatnaggcg	tgcgcogcca	atntgtcncc	gtttattntn	ccagctcnc	240
ctnccnacc	tacntcttcn	nagctgtcn	acccctngtn	cgnacccccc	naggtcggga	300
tccgggtttn	nttgaccgng	cnnccctcc	ccctctccat	nacganccnc	ccgcaccacc	360
nanngcncc	nccccggnct	cttcgcencc	ctgtcctntn	ccctgtngc	ctggcnengn	420
acbgcattga	ccctogccnn	ctnccngaaa	nccnanaegt	ccgggttggn	annancgctg	480
tgggnnngcg	tctgcnccgc	gttccttccn	nccncttcca	ccatcttctn	tacngggtct	540
cncgcenctc	tccnnccncc	cctggggagc	tntctctngc	ccctcttnac	tccccccctt	600
cgnccgtgnc	cgncccccac	ntcatttnc	nacgtctctc	acaannccct	ggntnctcc	660
cnanccnncn	gtcancnag	ggaagggngg	ggnnccnntg	nttgacgttg	ngngangtc	720
cgaanantcc	tccnctcan	cctacccct	cgggcggnct	ctcngttnc	aacttaccac	780
ntctccccc	ngngcnctc	tccgcctcnc	cnncccnct	ctctgcantg	tctctgtctc	840
tnaccnntac	gantnttcgn	cncctcttcc	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (815)

<223> n = A, T, C or G

<400> 24

gcattgcaagc	ttgagtattc	tatagngtca	cctaaatanc	ttggontaat	catggctonta	60
nctgncttcc	tgtgtcaaat	gtatacnaa	tanatatgaa	tctnatntga	caaganngta	120
tctnccatta	gtacaaatg	tntgtccct	cctgtongan	canctccca	ttnattncgn	180
cgcattcnccn	gcnantatn	taatngggaa	ntcnnntnnn	ncacnnccat	ctatctncc	240
gncctctgac	tggnagagat	ggatnantt	tntnttgacc	nacatgttca	tcttggattn	300
aanaccccc	cgcnccac	cggttngng	cnagccnntc	ccaagacetc	ctgtggaggt	360

aacctgogtc	aganncatca	aacntgggaa	acccgcnccc	angtnnaagt	ngnnncanan	420
gaccccgtec	agnttnacc	atcccttenc	agocccccc	ttngtgcctt	anagnnagc	480
gtgtccnanc	cncacaacat	ganaogcgcc	agncacccc	caattnggca	caatgtcgnc	540
gaacccccca	gggggantna	tncaaanccc	caggattgtc	cncncangaa	atcccnanc	600
cccnccctac	ccnnccttgg	gacngtgacc	aantcccgga	gtncacgtcc	ggcngnctc	660
ccccacgggt	nnccntgggg	gggtgaanct	cngnntcanc	cngncgaggn	ntcgnaagga	720
acccggccctc	ggncgaanng	ancnntcnga	agncccnct	cgtataaccc	ccctcncca	780
nccnacngnt	agntccccc	cngggtnogg	aangg			815

<210> 25

<211> 775

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(775)

<223> n = A,T,C or G

<400> 25

ccgagatgtc	tcgtccgtg	gccttagctg	tgctogcgct	actctctctt	tctggccctgg	60
aggetatcca	gcgtactcca	aagattcagg	tttactcaog	tcattccagca	gagaatggaa	120
agtcgaattt	ccgtgaattgc	tatgtgtctg	ggtttcctcc	atccgacatt	gaanttgact	180
tactgaagaa	tggaagaga	attgaaaag	tgagagcattc	agacttgtct	ttcagcaagg	240
actggtcttt	ctatctcttg	tactacactg	aattcaacccc	cactgaaaaa	gatgagtatg	300
cctgcctgtg	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gacgagaca	360
tgtaagcagn	cnnccatggaa	gtttgaagat	gcggcatttg	gattggatga	atcccaaat	420
ctgcttgcct	genttttaat	antgatatgc	ntatacaccc	taccccttat	gnccccaat	480
tgtaggggtt	acatnabtgt	tcnctnngga	catgatcttc	ctttataant	ccnccnttcg	540
aattgcccgt	cccccggttc	ngaattgttc	cnnacccacg	gttggctccc	ccaggtcncc	600
tcttacggaa	gggcctgggc	cncttttcaa	gggtggggga	accnaaaatt	tcnctnttgc	660
ccncccncca	cnctcttgng	nnccnctttt	ggaaaccttc	cnattccccc	tggtctonna	720
nccttnncta	anaaaacttn	aaanctngc	naaannttn	acttccccc	ttacc	775

<210> 25

<211> 820

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(820)

<223> n = A,T,C or G

<400> 26

anattantac	agtgtaatct	tttcccagag	gtgtgtanag	ggaacggggc	ctagaggcat	60
ccanagata	ncctatance	acagtgcctt	gaccaagagc	tgctgggcac	atttcttgra	120
gaaaaggtgg	cgtccccc	cactccctcc	ctcccatagc	catcccagag	gggtgagtag	180
ccatcangcc	ttcggtggga	gggagtcang	gaaacaacan	accacagagc	anacagacca	240
ntgatgacca	tgggcgggag	cgagctctct	ccctgnaccg	gggtggcana	nganagccca	300
notgaggggt	cacactataa	acgttaacga	ccnagatnan	cacctgcctc	aagtgcaccc	360
ttcctacctg	acnaccagng	accnnnaact	gongcctggg	gacagcctg	ggancagcta	420
acnnagcact	caactgcctc	cccatggccg	tnogcctccc	tggtccctgnc	aaggggaagct	480
ccctgttggg	attncggggg	naaccaaggga	ncrccctcct	ccanctgtga	agggaaaann	540
g tgggaatt	tncccttccg	gccnmtcccc	tcttccctta	caagccccc	mtactcttc	600
tcctctcttt	ntccctncc	acttttnacc	ccnnatttc	ccttnattga	tggannctn	660
ganattccac	tnnccctncc	ctnccateng	naanaaaaa	nactntctna	ccnnggggat	720
gggnccctcg	ntcctctctt	cttttctnct	acnccennct	ctttgcctct	ccttnagatca	780

tccaaacntc gntggccntn cccccccnnn tcccttncce

820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)... (818)
 <223> n = A,T,C or G

<400> 27
 tctgggtgat ggcctcttcc tccctcagga cctctgaactg ctctgggcca aagaatctct 60
 tgtttcttct ccgagcccca ggcagcgggtg attcagccct gcccaacctg attctgatga 120
 ctgcggatgc tctgacggac ccaaggggca aataggggtcc cagggtccag ggagggggcg 180
 ctgctgagca cttecgcccc tcaacctgccc cagccctgc catgagctct gggctgggtc 240
 tccgcctcca gggttctgct ctccangca ngccancaa gggcgtggg ccacactggc 300
 ttctctctgc cccntccctg gctctganc tctgtcttcc tgtctgtgc angcnccttg 360
 gatctcagtt tccctcctc anngaaactct gttctgann tcttcantta actntgantt 420
 tatnacnan tggnetgtnc tgcnnactt taatgggcm gacoggetaa tccctccctc 480
 nctcccttcc anttcnnna accngcttnc cntctctcc cntancccg ccnggggaanc 540
 ctcccttgc ctaccangg gccnnnaccg cccntnnctn ggggggcnng gtanctnenc 600
 ctgntnnccc cctcncnnt tncctctgccc cncnnnccg nngcannkte nengtccenn 660
 tnnctcttcc ngntctgna ngntcncntn tnnnnngncn ngntnntncc tccctctenc 720
 cnnntgnang tnnntnnnc ncnngncccc nnnnnnnnn nggnntnnn tctnccnngc 780
 cccncccc ngnattaagg cctccnntct ccggcnc 818

<210> 28
 <211> 731
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)... (731)
 <223> n = A,T,C or G

<400> 28
 aggaagggcg gaggatatt gtangggatt gagggatagg agnataangg gggaggtgtg 60
 tcccaacatg anggtgngt tctcttttga angaggttg ngtttttaon ccnggtgggt 120
 gattnaaccc cattgtatgg agnnaaagg ttttagggat ttttcggctc ttatcagkat 180
 ntanattcct gtnaatcgga aaatnatntt tcnncnggaa aatnttgctc ccatccgnaa 240
 attctcccg ggtagtgcatt ntingggggg cngccangtt tccaggtg ctanaatcgt 300
 actaaagntt naagtggan tncaaatgaa aacctnncc agagnatccn taccogactg 360
 tnnottncct tgcctctatg actctgcnng agcccaatac ccngngnat gtcccncngn 420
 nngcgncnc tgaannnnn tcnnggctnn gancatcang gggttctgca tcaaaagcnn 480
 cgtttcncat naaggcactt tngcctcacc caaccnctng cctcnncca tttngccgtc 540
 nggttncct acgctnntng cncctnnntn ganattttnc ccgctnngg naancctcct 600
 gnaatgggta gggnccttnc ttttnaccnn gggtntact aatcnnctnc acgctnctt 660
 tctcnacccc ccccttttt caatccccc ggcnaatggg gtctccccc cngggggggg 720
 nnnccann c 731

<210> 29
 <211> 822
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (822)
 <223> n = A,T,C or G

<400> 29
 actagtccag tgtggtggaa ttccattgtg ttggggncnc ttctatgant antnttagat 60
 cgetcanacc tcacancctc ccnaccnangc ctataangaa nannaataga nctgtncnnt 120
 atntntacnc tcatanncct cnnnaccacac tccctcttaa cccntactgt gccctatngcn 180
 tnnntantct ntgcgcctcn cnanccacqn gtggggcnac cncnngnatt ctcnatctcc 240
 tcncatntn gcttananta ngtnacatacc ctatacctac nccaatgcta nonctaancn 300
 tccatnantt annntaacta ccactgacnt ngactttcnc atnancctct aatttgaatc 360
 tactctgact cccacngcct annnatttagc ancntcccc nacnatntct caaccaaatc 420
 ntaaccaacc tatctanctg ttncccaacc nttnctctcg atccccnnae aaccccccctc 480
 ccaaatcccc nccactgac nccaaacccn caccatcccg gcaagccnan ggnccatttan 540
 ccactggat cactatngga naaaaaaac ccnaactctc tancncnnat ctccctaana 600
 aatntctctn naatttactn ncantnccat caanccacn tgaaacnnaa cccctgtttt 660
 tanatccctt ctttcgaaa cnaaccctt anncccaac ctttngggcc ccccccctnc 720
 cnaatgaag gncncccaat cnangaaacg nccntgaaa ancnagcna anannntccg 780
 canatccat cccttantn ggggcccctt nccnngggcc cc 822

<210> 30
 <211> 787
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)... (787)
 <223> n = A,T,C or G

<400> 30
 cggccgcctg ctctggcaca tgcctcctga atggcatcaa aagtgatgga ctgcccatg 60
 cttagagaaga ccttctctoc tactgtcatt atggagccct gcagactgag ggctccctt 120
 gtctgcagga tttgatgtct gaagtctgg agtgtggtt ggagctctc atctacatna 180
 getggaaagc ctggagggcc tctctcgcca gctccccc tctctcaag ctctccagg 240
 acaccagggg ctccaggcag cccattattc ccagnangac atggtgtttc tccacgcgga 300
 cccatggggc ctgnaaggcc aggtctctct ttgacaccat ctctcccgto ctgcttgga 360
 ggccgtggga tccactantt ctanaacggg ogccacncg gtgggagctc cagcttttgt 420
 tcccttaat gaaggttaat tgcncgctt ggcataatc nggtcnaac tntttctgt 480
 gtgaaattgt tntccctc ncnattcnc ncnacatac aaccgggaan cataaagtgt 540
 taaagcctgg gggtnccctn nngaanaac tnaactcaat taactgogtt ggctcatggc 600
 ccgctttccn ttcnngaaaa ctgtctccc ctgcnttmt gaatcggcca ccccccnggg 660
 aaaagcggtt tgcnttttng gggntcctt cnccttccc cctcncctaa cctnccgct 720
 cggctgttnc nggtngcggg gaanggggat nnnctcccnc naagggggng agnnngatat 780
 ccccaaa 787

<210> 31
 <211> 799
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (799)
 <223> n = A,T,C or G

<400> 31

```

tttttttttt ttttttttggc gatgctactg ttttaattgca ggaggtgggg gtgtgtgtac      60
catgtaccog ggctattaga agcaagaagg aaggaggagag ggcagagcgc cctgtctgagc      120
aacaaggac tccgtcagcc ttctctgtct gtctcttggc gcagggcact ggggaggcct      180
cccgaggggt gggggccacc agtccagggg tgggagcact acannggggtg ggagtgggtg      240
gtggctggtn cnaatggcct gncacanatc cctacgattc ttgacacctg gatttcacca      300
ggggacette tgttctccca nggnaacttc nttnatctcn aaagaacaca actgttctct      360
cngcanttct ggctgttcat ggaaagcaca ggtgtccnat ttnggtctggg acttgggtaca      420
tatggttcog gcccaoctct ccntcnaaa aagttaattca ccccccccn ccntctnttg      480
cctgggcoct taantaacca caccggaact canttanta ttcatcttng gntgggttg      540
ntnatcnccn cctgaangcg ccaagttgaa aggccacgac gtncnccnctc cccatagnan      600
ntttttnccn canctaattc cccccnnggc aacnatccaa tcccccccn tgggggcccc      660
agcccaangc ccccgctctg ggnnnccngn cncgnantcc ccaggtcttc ccantcngnc      720
ccnnngcncc ccgcacgca gaacanaagg ntngagccnc cgcannnnnn nggttnccnc      780
ctgccccccn ccnccgng      799

```

<210> 32
 <211> 789
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (789)
 <223> n = A, T, C or G

```

<400> 32
tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt      60
tttttccnag ggcaggttta ttgacaacct cncgggacac aancaggctg gggacaggac      120
ggcaacaggc tccggcgggc gggcgggcgg cctacactgc ggtacccaat ntgcagctc      180
cgctcccgct tgatnttctt ctgcagctgc aggatgccnt aaaacagggc ctgggcctn      240
ggtgggcaac ctgggatttn aatttccacg ggcacaatgc ggtogcance cctcaccacc      300
nattaggaat agtggnttta ccnccncccg ttggcncact cccnttggaa accacttntc      360
gcggtctcgg catctggtct taaaccttgc aaacnctggg gccctctttt tggttantnt      420
ncnggccaca atcatnactc agactggcnc gggctggccc caaaaaancn ccccaaaacc      480
ggcccatgtc ttncgggggt tgctgcnatn tncatcacct cccgggcncn ncaggncaac      540
ccaaaagttc ttgngggccn caaaaanct cccgggggnc ccagtttcaa caaagctac      600
ccccttggcc cccaaatcct cccccgntt nctgggtttg ggaacccacg cctctnctt      660
tggngggcaa gntgntccc ccttcggggc cccggtgggc cnnctctaa ngaaaacncc      720
ntcctnnnca ccatccccc nngnnacgnc tancaangna tccctttttt tanaaacggg      780
ccccccnng      789

```

<210> 33
 <211> 793
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (793)
 <223> n = A, T, C or G

```

<400> 33
gacagaacat gttggatggt ggagcaccct tctatacgac tcacaggaca gcagatgggg      60
aattcatggc tgttggagca atanaacccc agttctacga gctgtgatc aaaggacttg      120
gactaaagtc tgatgaactt cccaatcaga tgagcatgga tgattggcca gaaatgaana      180
agaagtttgc agatgtattc gcaaagaaga cgaaggcaga gtggtgtcaa atctttgacg      240
gcacagatgc ctgtgtgact ccggttctga cttttgagga ggttgttcat catg tcaca      300
acaangaacg gggctcgttt atcaccantg aggagcagga cgtgagcccc cgccctgcac      360

```

```

ctctgtgtgt aaacacccca gccatccctt ctttcaaaa ggatccacta cttctagagc 420
ggncgccacc gcggtggagc tccagctttt gttcccttta gtgagggtta attgcgcgct 480
tggcgtaatc atggtcatan ctgtttcttg tgtgaaattg ttatccgctc acaattccac 540
acaacatacg anccggaagc atnaaatttt aaagcctggg ggtngcctaa tgantgaact 600
nactcacatt aattggcttt gcgctcactg cccgctttcc agtccggaaa accgtgctct 660
gccagctgcc nttaatgaat cnggccaccc cccggggaaa aggcngtttg cttnttgggg 720
cgncttccc gctttctcgc ttcctgaant ccttcccccc ggtctttcgg cttgoggcna 780
acggtatcna cct 793

```

```

<210> 34
<211> 756
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(756)
<223> n = A,T,C or G

```

```

<400> 34
ggcgagaccg gcatgtacga gcaactcaag ggcgagtggg accgtaaaag ccccaatctt 60
ancaagtgcg gggaaanagct ggttcgactc aaactagtgc ttctggagct caacttcttg 120
ccaaccacag ggaccaagct gaccaaacag cagctaattc tggcccgta catactggag 180
atcgggggccc aatggagcat cctacgcaan gacatccctt ccttcgagcg ctacatggcc 240
cagctcaaat gctactactt tgattacaan gaggagctcc ccgagtcagc ctatatgcac 300
cagctctctg gccctaacct cctcttctct ctgtccaga accgggtggc tgantccac 360
acgganttg ancgctgcc tgcccaanga cacaanacc aatgtctaca tcnaccacca 420
gtgtcctgga gcaatactga tgganggcag ctaccncaa gtnttcttg ccnagggtta 480
catcccccgc cgagagctac accttcttca ttgacatct gctcgacact atcagggatg 540
aaaactgcng ggttgctcca gaaaggctnc aanaanatcc tttcncctga agggccccgg 600
atnctctagt nctagaatcg gcccgccatc ggggtgganc ctccaaactt tegttnccct 660
ttactgaggg ttnattgcng ccttggtggt tatcatggtc acnccngttn cctgtgttga 720
aatntttaac cccccacaat tccacgcena catnng 756

```

```

<210> 35
<211> 834
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(834)
<223> n = A,T,C or G

```

```

<400> 35
ggggatctct anacnacct gnatgcattg ttgtcgggtg ggtcgtctgc gatgaanag 60
aacaggatct tgcctctgaa gctctoggct gctgtnttta agttgctcag tctgcccgtc 120
tagtcagaca cncctctggg caaaaaacan caggatntga gtcttgattt caccctccat 180
aatcttcngg gctgtctgct cggtgaaact gatgaenang ggcagctggg tgtgtntgat 240
aaantccanc angttctctt tggtagacct ccttcaaaag ttgttcgggc ctctctcaa 300
ctctctnaaa angannacc canctttgtc gagctgggat ttgganaaca cgtcactggt 360
ggaaactgat cccaaatggt atgtcatcca tgcctctgct tgcctgcaaa aaacttgctt 420
ggcncaaatc cgaactcccn tcttgaaaag aagccnatca cccccctc cctggactcc 480
nncangact ctncogctnc ccctccngg cagggttggg ggcannccgg gccctgcgc 540
ttcttcagcc agttcacnat nttcatcago cctctgcca gctgtntat tcttggggg 600
ggaancogtc tctcccttcc tgaannaact ttgacgctng gaatagccgc gentcncnt 660
actnctggg cggggttcaa antccctcn ttgncntcn cctcgggcca ttctggattt 720
nccnaacttt tctcttccc cnccccnngg ngtttgntt ttcatnngg ccccaactct 780

```

gctcttggtg antccctgg gggctntan cccccctnt ggtccntng ggc

834

<210> 36
 <211> 814
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (814)
 <223> n = A,T,C or G

<400> 36
 cggncgcttt ccngccgcgc cccgtttcca tgacnaaggc tcccttcang ttaataacnn 60
 cctagnaaac attaatgggt tgcctacta atacatcata cnaaccagta agcctgccc 120
 naacgccaac tcaggccatt cctacaaaag gaagaaaagg tggctctctc cccccctgta 180
 ggaaggcct gctttgtaag acaccacaat nccgctgaat ctnaagtctt gtgttttact 240
 aatggaaaaa aaaaataaac aanaggtttt gttctcatgg ctgccacog cagcctggca 300
 ctaaaacanc ccagcgctca cttctgcttg gaaaaatatt ctttgctctt ttggacatca 360
 ggcttgatgg tatcactgcc acntttccac ccagctgggc ncccttcccc catntttgtc 420
 antgancctg asggcctgaa ncttagcttc caaaagtctc ngccccacaag accggccacc 480
 aggggangtc ntctncagtg gatctgccaa anantaccn tatcatcnnt gaataaaaag 540
 gcccctgaac ganatgcttc cncancctt taagaccat aatcctngaa ccattggtgc 600
 ctccggtct gatccnaag gaatgttctt gggctccant cctcctttg ttncctacgt 660
 tgtnttggac centgctngn atnaccaan tganatccc ngaagcacc tncctctggt 720
 atttganttt cntaaattct ctgcctacn nctgaagca cnattccctn ggcncnaaan 780
 ggngaactca agaaggctcn ngaaaaacca cncn 814

<210> 37
 <211> 760
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (760)
 <223> n = A,T,C or G

<400> 37
 gcatgctgct ctccctcaaa gttgttcttg ctgccataac aaccaccata ggtaaagcgg 60
 gcgcagtggt cgtgaaggg gttgtagtac cagcgcggga tgcctcctt gcagagtcct 120
 gtgtctggca ggtccacgca atgcctcttg tcactgggga aatggatgog ctggagctcg 180
 tcnaanccac tcgtgtattt ttracangca gctcctcgg aagcctccgg gcagtgggg 240
 gtgtcgtcac actccactaa actgtcgatn cncagccca ttgctgcagc ggaactgggt 300
 gggctgacag gtgccagaac acactggatn ggcctttcca tggaaaggcc tgggggaaat 360
 cncctnanc caaactgcct ctcaaaggcc accttgcaac ccccgacag ctagaaatgc 420
 actctctctt ccaaaaggtag ttgttcttgt tgcccaagca ncctccancc aaccanaanc 480
 ttgcaaaact tgcctcgttg gggkcatnn taccanggtt ggggaaanaa acccgcnqn 540
 ganccnctt gtttgaatgc naagynsata atcctcctgt cttgcttggg tggaaagca 600
 caattgaact gttacnttg ggcgngttc cncctnggtg gcttgaaact aatraccgtc 660
 actggaaaaa ggtangtgcc ttccttgaat tccqaaant cccctngntt tgggtnttt 720
 ctccctctnc ctaaaaatcg tnttcccccc cntangggg 760

<210> 38
 <211> 724
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (724)
 <223> n = A,T,C or G

<400> 38
 tttttttttt tttttttttt tttttttttt ttttttaaaa cccctcccat tgaatgaaaa 60
 ctccnaaat tgtccaacc cctcnccaa atnncattt cggggggggg gtcccaaac 120
 caaattaatt tgganttta aattaaatnt tnattngggg aanaaccaa atgtnaagaa 180
 aatttaacc attatnaact taaatnccn gaaacccntg gnttccaaa attttaacc 240
 ctkaaatccc tccgaattg ntaanggaaa accaaattcn cctaaggctn tttgaagggt 300
 ngatttaaac ccccttnant tnttttnacc cngnctnaa ntattngnt tccgggtgtt 360
 tccnttaan cntnggtaac tcccgntaat gaannccct aanccaatta aaccgaattt 420
 tttttgaatt ggaattccn ngggaattna cgggggtttt tccnttttg gggccatnc 480
 cccnttttg gggtttggg ntgggttga tttttnnng ncccaaaaaa nccccaana 540
 aaaaaactcc caagnnttaa ttngaattnc ccccttccca ggccttttg gaaaggnggg 600
 tttntggggg cnggggantt cnttccccc tnccnccoc ccccccnggt aaanggttat 660
 ngntttggg ttttggggc cttnanggac cttccggatn gaaattaat cccgggngc 720
 gccg 724

<210> 39
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (751)
 <223> n = A,T,C or G

<400> 39
 tttttttttt tttttctttg ctcacattta atttttattt tgattttttt taatgctgca 60
 caacacaata tttatttcac tttttctttt tttttcattt catttggttg ctgctgctgt 120
 tttatttatt tttactgaaa gtgagaggga actttttgtg ctttttttcc tttttctgta 180
 ggcgccttta agctttctaa atttggaaac tctaagcaag ctgaanggaa aagggggttt 240
 cgcacaaatca ctggggggaa nggaagggtt gctttgttaa tcatgctta tgggtgggtg 300
 ttaactgctt gtacaattac ntttcatttt taattaattg tctnaangc ttttaattana 360
 cttgggggtt cctcccccac accaaccccn ctgacaaaaa gtgcngccc tcaaatnatg 420
 tcccggnnt cnttgaaaca caengcngaa ngttctcatt ntcccnccn caggtnaaaa 480
 tgaagggtta ccatntttaa cncacctcc acntggcnm gctgaatcc tcnaaaancn 540
 cctcaancn aattncntng ccccggtenc gentngtcc cncccgggt cgggaantn 600
 cccccccga annccntnc naacnaaatt ccgaaaatat tcccnctnc tcaattcccc 660
 cnnagactnt cctcnncnan cncaatttt tttcnctac gaacncgnc cnaaaatgn 720
 nnnnccctc cntngtccn naatnccan c 751

<210> 40
 <211> 753
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (753)
 <223> n = A,T,C or G

<400> 40
 gtggtatttt ctgtaagatc aggtgttctt cctctgtagg tttagagga acacccctcat 60
 agatgaaac ccccccgaga cagcagcact gcaactgcca agcagcggg gtagggaggg 120

cgccttatgc	acagctgggc	ccttgagaca	gcagggttc	gatgtcagge	togatgtcaa	180
tggctctggaa	gogggcgctg	tacctgcgta	ggggcacacc	gtcagggccc	accagggaact	240
tctcaaaagt	ccaggcaacn	togttgcgac	acacccggaga	ccagggtgatn	agcttgggggt	300
cggtcataa	cgcggtggcg	togtgcgtgg	gagctggcag	ggcctccgcg	aggaaaggcna	360
ataaaaggtg	cgcgcgcgca	ccgttcanct	cgcacttctc	naanaccatg	angttgggct	420
cnaaccacc	accannccgg	acttccttga	nggaattccc	aaatctcttc	gntcttgggc	480
ttctnctgat	gacctanctg	gttgcccngn	atgccaanca	noocaaancc	ccggggctct	540
aaanccccc	cctctccttt	tcactctgggt	tnttctctcc	ggaccttggg	tctctctcaag	600
ggancccata	tctcnaccan	tactcaccnt	noocccccc	gnnaccancc	cttctanngn	660
ttccncccg	ncctctggcc	cttcaaanan	gcttncacna	cctgggtctg	ccttcccccc	720
tnccctatct	gnaccccnch	ttgtctcan	tnt			753

<210> 41
 <211> 341
 <212> DNA
 <213> Homo sapien

<400> 41	
actatattcca	tcacaaqaga
agtgaaccca	tccttgattt
ttctttaaac	cttgttcatt
tatagcttgt	ttacgtagta
tggttaactg	cgatttttaa
ttttactttt	tgattaattg
	tggtttatcat
	attagggtag
	t
	60
	120
	180
	240
	300
	341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42	
acttaactgaa	tttagttctg
gtttcaacaa	ttctaataas
	ataattttca
	gtggcttcat
	a
	60
	101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43	
acatctttgt	tacagtctaa
tcagggttg	ttcacactg
tcagatgcct	tgctaagctt
cctcttgaga	ggtcagtaaa
tggtatcaga	acgagagtta
tcgaa	
	60
	120
	180
	240
	300
	305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (852)
 <223> n = A, T, C or G

<400> 44

acataaatac	cagagaaaag	tagtcttga	aatacttaag	tcagagggt	ctttgtttct	60
gattatttgg	tggtgtttt	ggttctgtg	caaagtattg	gcagcttcag	ttttcatttt	120
ctctccatcc	tcgggcatte	ttcccaatt	tataaccag	tcttcgtcca	tcacacagct	180
ccagaatttc	tcctttgtag	taatatctca	tagctcggct	gagcttttca	taggtcatgc	240
tgtgtgtgtt	cttcttttta	ccccatagct	gagccactgc	ctctgatttc	aagaacctga	300
agacgcccctc	agatoggtct	tcccatttta	ttaactctgg	gttctgtct	gggttcaaga	360
ggatgtcgcg	gatgaattcc	cataagttag	tcctctctgg	gttctgtctt	ttgggtgtggc	420
acttggcagg	gggtctctgc	tcctttttca	tatcagggtg	ctctgcaaca	ggaagggtgac	480
tggtgtgtgt	catggagatc	tgagcccggc	agaaagtttt	gctgtccaac	aaatctactg	540
tgctaccata	gttgggtgtc	tataaatagt	tctngtcttt	ccagggtgtc	atgatggaag	600
gctcagtttg	ttcagctctg	acaatgacat	tgtgtgtgga	ctggaacagg	tcactactgc	660
actggccggt	ccacttcaga	tgctgcaagt	tgctgtagag	gagntgcctc	gcogtccctg	720
cgcgccgggt	gaactcctgc	aaactcatgc	tgcaaaaggtg	ctcgccgttg	atgtcgaaat	780
cntggaagg	gatacaattg	gcctccagct	ggttgggtgc	caggagggtga	tggagccact	840
ccracacctg	gt					852

<210> 45

<211> 234

<212> DNA

<213> Homo sapien

<400> 45

acaacagacc	cttgcctgct	aacgacctca	tgctcatcaa	gttggacgaa	tcogtgcctg	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctacogcg	gggaactctt	120
gctctgttcc	tggctggggt	ctgctggcga	acggcagaat	gcctacogtg	ctgcagtgcg	180
tgaacgtgtc	ggtggtgct	gaggaggct	gcagtaagct	ctatgacccg	ctgt	234

<210> 46

<211> 590

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1) ... (590)

<223> n = A, T, C or G

<400> 46

acttcttatt	taaatgttta	taaggcagat	ctatgagaat	gatagaaaac	atgggtgtgt	60
atttgatagc	aattatttgg	agattacaga	gttttagtaa	ttaccaatta	cacagttaaa	120
aagaagataa	tatattccaa	gcanatacaa	aatatcta	gaagatcaa	ggcaggaaaa	180
tgantataac	taattgacaa	tgaaaaatca	attttaatgt	gaattgcaca	ttatccttta	240
aaagctttca	aaanaaanaa	ttattgcagt	ctanttaatt	caaacagtgt	taaatgggtat	300
caggataaan	aactgaaggg	canaaagaa	taattttcac	ttcatgtaac	ncaccanatt	360
ttacaatggc	ttaaatgcan	ggaaaaagca	gtggaagtag	ggaagtantc	aaggtctttc	420
tggtctctaa	tctgccttac	tctttgggtg	tggctttgat	cctctggaga	cagctgccag	480
ggctctgtgt	atatccacaa	tcccagcagc	aagatgaagg	gatgaaaagg	gacacatgct	540
gccttccctt	gaggagactt	catctcactg	gccacacact	agtcacatgt		590

<210> 47

<211> 774

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1) ... (774)

<223> n = A, T, C or G

<400> 47

acaagggggc	ataatgaagg	agtggggana	gatttttaag	aaggaaaaaa	aaagaggccc	60
tgaacagaat	tttctgnac	aacggggctt	caaaataatt	ttcttgggga	ggttcaagac	120
gcttcactgc	ctgaaactta	aatggatgtg	ggacanaatt	ttctgtaatg	accctgaggg	180
cattacagac	gggactctgg	gaggaaggat	aaacagaaag	gggacaaagg	ctaaccacaa	240
aacatcaaag	aaaggaaggt	gggtcatac	ctcccagcct	acacagttct	ccagggctct	300
cctcatccct	ggaggacgac	agtggaggaa	caactgacca	tgtcccaggg	ctcctgtgtg	360
ctggctcctg	gtcttcagcc	cccagctctg	gaagcccacc	ctctgctgat	cctgctgggc	420
ccacactcct	tgaacacaca	tcccaggtt	atactcctgg	acatggctga	acctcctatt	480
cctacttccg	agatgccttg	ctccctgcag	cctgtcaaaa	tccrctcac	cctccaaacc	540
acggcatggg	aagcctttct	gacttgccctg	attactccag	catcttgga	caatccctga	600
ttccccactc	cttagaggca	agataggggtg	gttaagagta	gggctggacc	acttgagacc	660
aggtgctctg	cttcaaatcn	tggctcattt	acgagctatg	ggaccttggg	caagtatct	720
tcacttctat	gggctcatt	ctgttctacc	tgcaaaatgg	gggataataa	tagt	774

<210> 48

<211> 124

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{124}

<223> n = A,T,C or G

<400> 48

canaaattga	aattttataa	aaaggcattt	ttctcttata	ccataaaat	gatataattt	60
ttgcaantat	anaaatgtgt	cataaattat	aatgttccct	aattacagct	caacgcaact	120
tggt						124

<210> 49

<211> 147

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{147}

<223> n = A,T,C or G

<400> 49

gccgatgcta	ctattttatt	gcaggagggtg	gggggtgtttt	tattattctc	tcaacagctt	60
tgtgggtaca	gggtgtgtct	gactgcatna	aaaanttttt	taagggtgat	tgcaaaaatt	120
ctagggcacc	catatcccaa	gcantgt				147

<210> 50

<211> 107

<212> DNA

<213> Homo sapien

<400> 50

acattaaatt	aataaaagga	ctgttgggggt	tctgctaaaa	cacatggctt	gatatatctc	60
atggtttgag	gttaggagga	gttaggcata	tgttttggga	gaggggt		107

<210> 51

<211> 204

<212> DNA

<213> Homo sapien

<400> 51

gtcctaggaa gtctaggga cacacgactc tgggggtcag gggcggacac acttgacagg	60
cggaaggaa aggcagagaa gtgacacgtt cagggggaaa tgacagaaag gaaaatcaag	120
gccttgcaag gtcagaaagg ggaactcagg cttccaccac agccctgccc cacttgcca	180
cctccctttt gggaccagca atgt	204

<210> 52

<211> 491

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(491)

<223> n = A,T,C or G

<400> 52

acaaagataa catttatctt ataacaasa tttgatagtt ttaaagggtt gtattgtgta	60
gggtattttc caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaca	120
ccatcagaca ggttttttaa aaacaacata ttacaaaatt agacaatcat ctttaaaaaa	180
aaaacttctt gtatcaattt cttttgttca aaatgactga ctttaantatt ttttaatat	240
tcanaaacac ttctcctaaa attctcaana tggtagcttt canatgtncr ctcagtccca	300
atgttgctca gataaataaa tctcgtgaga acttaccac caccagaagc tttctggggc	360
atgcaacagt gtcttttctt tctctttctt tttttttttt ttacaggcnc agaaactcat	420
caattttatt tggataacaa aggggtctca aattatattt aaaaataaat ccaagttaat	480
atcactcttg t	491

<210> 53

<211> 484

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(484)

<223> n = A,T,C or G

<400> 53

acataattta gcagggttaa ttaccataag atgctattta ttaanaggtn tatgatctga	60
gtatttaacag ttgctgaagt ttggtatttt catgcagcat tttctttttg ctttgataac	120
actacagaac ctttaaggac actgaaaatt agtaagtaaa gttcagaaac attagctgct	180
caatcaaate totacataac actatagtaa ttaaaacgtt aaaaaaaagt gttgaaatct	240
gcactagtat anacogctcc tgcaggata anactgcttc ggaacagaaa gggaaaaaac	300
agctttgant ttttttctgc tgatagagg aaaggctgaa ttaccttctt gccctctcct	360
aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttcncg	420
tancctgant ctgtgtatc caggancagg cggatggaat gggccagccc ncggatgttc	480
cant	484

<210> 54

<211> 151

<212> DNA

<213> Homo sapien

<400> 54

actaaacctc gtgcttgta actccataca gaaaacgggt ccactcctga acacgggtgg	60
ccaactgggt tactgtgac aaccgcaaca acaaaaacac aactccttgg cactggctag	120

tctatgtcct ctcaagtgcc tttttgtttg t 151

<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggcttg tctccgggtg gttcccggtg cccccacgg tccccagaac ggacatttc 60
 gccctccagt ggaactcga gccaaagtgg t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggcggatgtg ogttggttat atacaaatat gtcattttat gtaagggaact tgagtatact 60
 tggatttttg gtatctgttg gttgggggga cggtcaggga accaataccc catggatacc 120
 aagggaacaac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A, T, C or G

<400> 57
 actctggaga acctgagcgg ctgctccggc tctgggatga ggtgatgcan gongtggcgc 60
 gactgggagc tgagcccttc cttttgcggc tgcctcagag gattgttgcg gacntgcana 120
 tctcantggg ctggatncat gcagggt 147

<210> 58
 <211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(198)
 <223> n = A, T, C or G

<400> 58
 acagggatat aggtttcnaag ttattgtnat tgtaaaatac attgaatttt ctgtatactc 60
 tgattacata cattatcct ttaaaaaaga tgtaaatcct aatttttatg ccactatata 120
 atttaccant gagttacott gtaaatgaga agtcatgata gcaatgaatt ttaactagtt 180
 ttgaattcta agtttggg 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

<400> 59

acaacaaatg ggttgtagg agtcttata agcaaaactg gtgatggcta ctgaaagat	60
ccattgaaaa ttatcattaa tgatttttaa tgacaagita tcaaaaactc actcaatttt	120
cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa	180
cacagtcaat aaatgacaaa gccagggcct acagggtggt tccagacttt ccagaccag	240
cagaaggaaat ctattttata acatggatct cgtctgtgc tcaaaatacc taatgatatt	300
ttcgtcttt attggacttc ttggaagagt	330

<210> 60
 <211> 175
 <212> DNA
 <213> Homo sapien

<400> 60	
accgtgggtg ccttctacat tcttgacggc tcttcacca acatctggtt ctacttcggc	60
gtcgtgggtc cttctctctt cactctcact cagctgggtg tgcctataga ctttgcgcac	120
tcttggaacc agcgggtgct gggcaaggcc gaggagtgc attccgtgc ctggt	175

<210> 61
 <211> 154
 <212> DNA
 <213> Homo sapien

<400> 61	
accccacttt tctctctgtg agcagtctgg acttctcact gctacatgat gagggtgagt	60
gggtgttgcct attcaacagt atctctccct ttcaggatct gctgagccgg acagcagtgc	120
tggactgcac agccccggg ctccacattg ctgt	154

<210> 62
 <211> 30
 <212> DNA
 <213> Homo sapien

<400> 62	
cgtctgagcc ctatagttag tegtattaga	30

<210> 63
 <211> 89
 <212> DNA
 <213> Homo sapien

<400> 63	
acaagtcatt tcagcaccct ttgctcttca aaactgacca tcttttatat ttaatgcttc	60
ctgtatgaat aaaaatggtt atgtcaagt	89

<210> 64
 <211> 97
 <212> DNA
 <213> Homo sapien

<400> 64	
accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa ggttctgcag	60
aatcagtga tccaggattg gtccttggat ctggggg	97

<210> 65
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(377)
 <223> n = A,T,C or G

<400> 65
 acaacaanaa ntcccttctt taggccaactg atggaaacct ggaacccctt ttgatggca 60
 gcatgggttc ctaggccttg acacagcggc tgggggtttgg gctntcccaa accgcacacc 120
 ccaaccctgg tctaccaca nttctggcta tgggtgtct ctgccactga acatcagggt 180
 tcggtcataa natgaatcc caanggggac agaggtcagt agaggagct caatgagaa 240
 ggtgctgttt gtcagccag aaaacagctg cctggcattc gccgttgac tatgaacccg 300
 ttgggggtgaa ctacccccc gaggaatcat gcctgggcga tgcaanggtg ccaacaggag 360
 gggcgggagg agcatgt 377

<210> 66
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 66
 acgcctttcc ctcagaatcc aggggaagaga ctgtgcctg ccttccctcg ttgttgctg 60
 agaaccctg tgcctctcc caccatctcc accctcctc catctttgaa ctcaaacacg 120
 aggaactaac tgcacctgg tctctctccc agtccctagt taccctcca tccctcact 180
 tctccactc taagggatat caacactgcc cagcaraggg gccctgaatt tatgtggtt 240
 ttatatatt ttttaataaga tgcactttat gtcatttttt aataaagtct gaagaattac 300
 tggtt 305

<210> 67
 <211> 385
 <212> DNA
 <213> Homo sapien

<400> 67
 actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga 60
 ggtcggacca gccacatctc atgtgcaaga ttgccagca gacatcaggt ctgagagttc 120
 cctttttaaa aaaggggact tgcttaaaaa agaagtctag ccacgattgt gttagagcagc 180
 tgtgctgtgc tggagattca cttttgagag agttctctc tgagacctga tcttttagagg 240
 ctgggcagtc ttgcacatga gatggggtg gtctgatcc agcactcctt agtctgcttg 300
 cctctccag ggcccagcc tggccacacc tgcttacagg gcactctcag atgccatac 360
 catagtttct gtgctagtgg accgt 385

<210> 68
 <211> 73
 <212> DNA
 <213> Homo sapien

<400> 68
 acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaataaa 60
 gtttttttaa tgg 73

<210> 69
 <211> 536
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(536)

<223> n = A,T,C or G

<400> 69

actagtccag	tgtggtggaa	ttccattgtg	ttggggggtc	tcacccctct	ctcctgcagc	60
cccagcttgg	tgctctgect	ctgaggagac	catggcccag	catctgagta	ccctgctgct	120
cctgctggcc	accctagctg	tggccctggc	ctggagcccc	aaggaggagg	ataggataat	180
cccgggtggc	atctataacg	cagacctcaa	tgatgagtgg	gtacagcggtg	cccttccactt	240
cgcacacagc	gagtataaca	aggccaccaa	agatgactac	tacagacgtc	cgctgcgggt	300
actaagagcc	aggcaacaga	ccgttggggg	ggtgaattac	ttcttcgacg	tagaggtggg	360
cogaaccata	tgtaccaagt	cccagcccaa	cttggacacc	tgtgcttcc	atgaacagcc	420
agaactgcag	aagaaacagt	tgtgctcttt	cgagatctac	gaagttccct	ggggagaaca	480
gaangtccct	gggtgaaatc	cagggtgtcaa	gaatctctan	ggatctgttg	ccagge	536

<210> 70

<211> 477

<212> DNA

<213> Homo sapien

<400> 70

atgaccccta	acagggggcc	ctcagccct	cctaabgacc	tcgggctag	ccatgtgatt	60
tcacttccac	tcataaargc	tcctataact	aggctacta	accaacacac	taaccatata	120
ccaatgatgg	cgcgatgtaa	cacgagaaag	cacataccaa	ggccaccaca	caccacctgt	180
ccaaaaaggg	cttcgatacg	ggataatcct	atctattacc	tcagaagtgt	ttttcttctg	240
agggattttt	ctgagccctt	taccactcca	gcttagcccc	taccccccaa	ctaggagggc	300
actggccccc	aacaggcctc	accccgctaa	atccccaga	agtcccactc	ctaaacacat	360
ccgtattact	cgcacagga	gtatcaatca	cctgagctca	ccatagtcta	atagaaaaca	420
acogaaacca	aattattcaa	agcactgctt	attacaattt	tactgggtct	ctattttt	477

<210> 71

<211> 533

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (533)

<223> n = A,T,C or G

<400> 71

agagctatag	gtacagtgtg	atctcagctt	tgcaaacaca	ttttctacat	agatagtact	60
aggtattaat	agatatgtaa	agaaagaaat	cacaccatta	ataatggtaa	gattggttta	120
tgtgatttta	gtggatcttt	tggcaccctt	atataatgtt	tccaaacttt	caggagtgat	180
attattttca	taacttaaaa	agtgaatttg	aaaaagaaaa	tctccagcaa	gcattctcatt	240
taaatataag	tttgtcatct	ttaaaaatca	agcaatattg	gactttttca	aaaagctgtc	300
aaataggtgt	gacctacta	ataattatta	gaataacatt	taaaaacatc	gagtacctca	360
agtcagtttg	ccttgaaaaa	tatcaaatat	aactcttaga	gaaatgtaca	taaaagaatg	420
cttcgtaatt	ttggagtang	aggttccctc	ctcaattttg	tattttttaa	angtacatgg	480
taaaaaaa	aattcacaac	agtatataag	gctgtaaaat	gaagaattct	gcc	533

<210> 72

<211> 511

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (511)

<223> n = A,T,C or G

<400> 72

tattacggaa aaacacacca cataattcaa ctancaaaga anactgcttc agggcgtgta	60
aaatgaagg cttccaggca gttatctgat taagaacac taaaagaggg acaaggctaa	120
aagcgcagg atgtctacac tatancaggc gctatttggg ttggctggag gagctgtgga	180
aaacatggen agattggtgc tgganategc cgtggctatt cctcattgtt attacanagt	240
gaggttctct gtgtgcccac tggtttgaas accgttctnc aataatgata gaatagtaca	300
cacatgagaa ctgaaatggc ccaaacccag aaagaaagcc caactagatc ctacagaanac	360
gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg	420
atttctctcc attgcagcna naaacccgtt cttctaagca aacncagggt atgatggcna	480
aaatacacc cctcttgaag naccnggagg a	511

<210> 73

<211> 499

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (499)

<223> n = A,T,C or G

<400> 73

cagtgcagc actggtgcca gtaccagtae caataacagt gccagtgcga gtgccagcac	60
cagtgggtggc ttacagtctg gtgcragcct gaccgccact ctcacatttg ggctcttcgc	120
tggccttggg ggagctggg ccagcaccag tggcagctct ggtgcctgtg gtttctccta	180
caagttagat tttagatatt gttatcctg ccagtcttcc tcttcaagcc aggggtgcac	240
ctcagaagcc tactcaacac agcactctag gcagccacta tcaatcaatt gaagttgaca	300
ctctgcatta aatctatttg ccattctctga aaaaaaaaaa aaaaaaaggg oggcgcctog	360
antctagagg gcccgtttaa acccgctgat cagcctcgac tgtgccttct anttgcagc	420
catctgttgt ttgcctctcc cccgntgcct tctttgaccc tggaaagtgc cactccact	480
gtccttctct aantaaat	499

<210> 74

<211> 537

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (537)

<223> n = A,T,C or G

<400> 74

tttcatagga gaacacactg aggagatact tgaagaattt ggattcagcc gcgaagagat	60
ttatcagctt aactcagata aaatcattga aagtaataag gtaaaagcta gtctctaact	120
tccaggccca eggtcagct gaatttgaat actgcattta cagtgtagag taacacataa	180
cattgtatgc atggaacat ggaggaacag tattacagtg tcttaccact ctaatcaaga	240
aaagaattac agactctgat tctacagtga tgattgaatt ctaaaaatgg taatcattag	300
ggcttttgat ttataaact ttgggtactt atactaaatt atggtagtta tactgccttc	360
cagtttgctt gatataattg ttgatattaa gattcttgac ttataatttg aatgggttct	420
actgaaaaan gaatgatata ttcttgaaga catogatata catttattta cactcttgat	480
tctacaatgt agaaaatgaa ggaatgccc caaattgtat ggtgataaaa gtcccg	537

<210> 75

<211> 467

<212> DNA

<213> Homo sapien

<220>
 <221> misc feature
 <222> (1)... (467)
 <223> n = A,T,C or G

<400> 75
 caaanacaat tgttcaaaag atgcaaatga tacactactg ctgcagctca caaacacctc 60
 tgcataattac acgtacctcc tectgctcct caagtagtgt ggtctatctt gccatcatca 120
 cctgctgtct gcttagaaga acggctttct gctgcaangg agagaaatca taacagaagg 180
 tggcacaagg aggccatctt ttctctatcg gttattgtcc ctagaagggt cttctgagga 240
 tctagtctgg cttctcttct gggtttgggc catttcantt ctcatgtgtg tactattcta 300
 tcattattgt ataacgggtt tcaaacnngt gggcancag agaacctcac tctgtaataa 360
 caatgaggaa tagccacggg gatctccagc accaaatctc tccatgttnt tccagagctc 420
 ctccagccaa cccaaatagc ogctgctatn gtgtagaaca tccctgn 467

<210> 76
 <211> 400
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)... (400)
 <223> n = A,T,C or G

<400> 76
 aagctgacag catttgggac gagatgtctc gctccgtggc cttagctgtg ctgcgctac 60
 tctctcttcc tggcctggag gctatccagc gtaactcaaa gattcagggt tactcacgtc 120
 atccagcaga gaatggaaag tcaaatctcc tgaattgcta tgtgtctggg ttccatccat 180
 cagacattga agttgaetta ctgaagaatg gagagagaat tgaaaaagtg gagcattcag 240
 acctgtcttt cagcaaggac tggctcttct atctcttgta ctacactgaa ttcaccccca 300
 ctgaaaaaga tgagtatgcc tggcgtgtga accatgtgac tttgtccagc cccaagatng 360
 tttagtgaggc tganacatg taagcagcan catgggaggt 400

<210> 77
 <211> 248
 <212> DNA
 <213> Homo sapien

<400> 77
 ctggagtgcc ttggtgtctc aagccctcgc aggaagcaga atgcaccttc tgaggcaacct 60
 ccagctgccc cggcggggga tgcgaggctc ggagcaacct tgcgggctg tgattgtctc 120
 caggcaactgt tcatctcagc tttctgtcc ctttctctcc ggcaagcgt tctgtctgaa 180
 gttcatatct ggagcctgat gtcttaacga ataaaggctc catgctccac ccgaaaaaaa 240
 aaaaaaaa 248

<210> 78
 <211> 201
 <212> DNA
 <213> Homo sapien

<400> 78
 actagtccag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca 60
 tcacccagac cggccctcgc ccgtgcacca cgtgctgtct aacgacagta tgatgcttac 120
 tctgtactct ggaaactatt ttatgtaat taatgtatgc ttcttctgtt ataatgcct 180
 gatttaaaaa aaaaaaaaaa a 201

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(552)
 <223> n = A,T,C or G

<400> 79
 tccttttctgt aggttttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60
 tttaggcagt gctagtaatt tctctgtaat gattctgtta ttactttctt attctttatt 120
 cctctttctt ctgaagctta atgaagttga aatttgaggt ggataaatac aaaaaggtag 180
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcaaaatt 240
 atgcaagtta gtaattactc aggggttaact aaattacttt aatatgctgt tgaacctact 300
 ctgttctctg gctagaaaaa attataaaca ggaatttctt agtttgggaa gccaaattga 360
 taatattcta tgttctaaaa gttgggttat acctaaanta tnaagaaata tggaaattta 420
 tccccaggaa tatgggggtt atttatgaat antccccggg anagaagttt tgantnaaac 480
 cngtttttgt taatacgtta atatgtcctn aatnaacaag gcntgactta tttccaaaaa 540
 aaaaaaaaaa aa 552

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 80
 acagggaatt gagatgctaa ggcaccagag atcgtttgat ccaaccctct tattttcaga 60
 ggggaaaaatg gggcctagaa gttacagaga atctagctgg tgcgctggca cccctggcct 120
 cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggccctgttt 180
 gcaattcacg ttgccacctc caacttaaac attcttcata tgtgatgtcc ttagtactta 240
 aggttaaaact ttcccaccca gaaaaggcaa cttagataaa atcttagagt accttcatac 300
 tcttctaagt cctcttccag cctcactttg agtctctctt ggggggtgat aggaantntc 360
 tcttggcttt ctcaataaaa tctctatcca tctcatgttt aatttggtae gcntaaaaat 420
 gctgaaaaaa ttaaatgtt ctggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476

<210> 81
 <211> 232
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(232)
 <223> n = A,T,C or G

<400> 81
 tttttttttg tatgccttctn ctgtggngtt attgttgcct ccaccctgga ggagcccagt 60
 ttcttctgta tctttctttt ctgggggata ttcttggctc tgcccttcca ttcccagcct 120
 ctcatccca tcttgcaatt ttgctagggt tggaggcgcct ttcttggtag cccctcagag 180
 actcagtcag cgggaataag tcttaggggt ggggggtgtg gcaagccggc ct 232

<210> 82
 <211> 383
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (383)
 <223> n = A,T,C or G

<400> 82
 aggggggagc agaagctaaa gccaaagccc aagaagagtg gcagtgcag cactggtgcc 60
 agtaccagta ccaataacat gccagtgcc gtgccagcac cagtgggtgc ttcagtgtgt 120
 gtgcragct gaccgccact ctacatttg ggctcttcgc tggccttggg ggagctgggt 180
 ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtgcag tttagatatt 240
 gttaatctgt ccagtccttc ctttcaagcc aggggtgcac ctcaaaaacc tactcaaac 300
 agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aactctattg 360
 ccatttcaaa aaaaaaadaa aaa 383

<210> 83
 <211> 494
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (494)
 <223> n = A,T,C or G

<400> 83
 accgaattgg gacogctggc ttataagcga tcatgtcttc cagtattacc tcaacgagca 60
 gggagatcga gtctatacgc tgaagaaatt tgaccgatg ggacaacaga cctgctcagc 120
 ccatoctgct oggttctccc cagatgacaa atactctoga caccgaatca ccataagaa 180
 acgtctcaag gtgctcatga ccagcaacc gcgcctgtc ctctgagggt cottaactg 240
 atgtcttttc tgcacactgt taacctctgg agactccta accaaactct tgggactgtg 300
 agccctgatg cctttttgac agccatactc tttggctccc agtctctctg ggcgattgat 360
 tatgcttgtg tgaggcaatc atggtggcat caccatnaa gggaacacat ttganttttt 420
 tttcncatat ttttaattac naaccagata nttcagaata aatgaattga aaaactctta 480
 aaaaaaadaa aaaa 494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (380)
 <223> n = A,T,C or G

<400> 84
 gctggtagcc tatggcgtgg ccacggangg gctcctgagg cacgggacag tgacttccca 60
 agtatcctgc gcogcgtctt ctaccgtccc tacctgcaga tcttcgggca gattccccag 120
 gaggacatgg acgtggccct catggagcac agcaactgct gtcggagacc cggctctctg 180
 gcacaccctc ctgggggccc ggctgggccc tgcgtctccc agtatgccaa ctggtctgtg 240
 gtgctgtctc tctgtctctt cctgtctgtg gccaacatcc tctgtgtcac ttgtcattg 300
 ccatgttcag ttacacattc ggcaagtag agggcaacag cnatctctac tgggaaggcc 360
 agcgttncgg cctcatcogg 380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (481)
 <223> n = A,T,C or G

<400> 85
 gagtttagctc ctccacaacc ttgatgaggt cgtctgcagt ggcctctcgc ttcataaccgc 60
 tnccatcgtc atactgtagg ttgcccacca cctctcgcgt ctgggggcgg ctaatatcra 120
 ggaaactctc aatcaagtca ccgtcnatna aaacctgtgc tgggtctgtc tcccgctcgg 180
 tgtgaaaagg tctccagaag gagtgcctga tcttccccac acttttgatg actttattga 240
 gtgatctctg catgtccagc aggaggttgt accagctctc tgacagttag gtcaccagcc 300
 ctatcatgcc nttagacgtg ccgaagaaca cagagccttg tgtggggggg gnagtctcac 360
 ccagattctg cattaccaga nagecgtggc aaaaganatt gacaactcgc ccaggngaa 420
 aaagaacacc tcttgaagt gctngccgct cctcgtccnt tgggtggngc gcntnccctt 480
 t 481

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (472)
 <223> n = A,T,C or G

<400> 86
 aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgctg agaattcatt 60
 acttggaaaa gcaacttnaa gcctggcacac tggattaaaa attcacaata tgcaacactt 120
 taacacgtgt gtcaatctgc tcccttactt tgtcatcacc agtctgggaa taagggtagt 180
 cccatttcac acctgttaaa agggcgctaa gcatttttga tccaacatct tttttctga 240
 cacaagtccg aaaaaagcaa aggtaaaacag tctttaattt gttagccnat tcaatttcct 300
 catgggacag agccatttga tttaaaaagc aaattgcata atattgagct ttgggagctg 360
 atatntgagc ggaagantag cctttctact tcaccagaca caactccctt catattggga 420
 tgttnacnaa agttatgtct ttacagatg ggatgctttt gtggcaattc tg 472

<210> 87
 <211> 413
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (413)
 <223> n = A,T,C or G

<400> 87
 agaaaccagt atctctnaaa acaacctctc ataccttctg gacctaatct tgbtgggtg 60
 tgbtgbtgcg cgcataattat atagacgggc acatcttttt tacttttgta aaagcttatg 120
 cctcttttgt atctatatct gtgaaagttt taatgatctg ccataatgtc ttggggacct 180
 ttgtcttctg tgtaaatggg actagagaaa acacctatnt tatgagtcaa tctagttngt 240
 tttattogac atgaaggaaa tttccagatn acaacactna caaactctcc cttgactagg 300

ggggacaaag aaaagcanaa ctgaacatna gaacaaattn cctgggtgaga aattncataa 360
acagaatttg ggtngtatat tgaaanannng catcattnaa acgttttttt ttt 413

<210> 88

<211> 448

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[448]

<223> n = A,T,C or G

<400> 88

cgcagcgggt cctctctatc tagctccagc ctctcgcttg cccactccc cgcgtccgc 60
gtcctagccn accatggcog ggcctctgag cgcctccttg cctctgcttg ccatcctggc 120
cgtggccctg gccgtgagcc cgcggccggg ctccagtcce ggcaagccgc cgcgcctggg 180
gggaggccca tggaccctgc gtggaagaag aaggtgtgag ggcgtgactg gactttgcgc 240
tcggcnanta caacaaacc gcaacnactt ttaccnagcn cgcgtgagc gtgtgtgcgc 300
cccaancaaa ttgttactng gggtaantaa ttcttggaag ttgaacctgg gccaaacnng 360
tttaccagaa cctagccaat tngaacaatt nccctccat aacagccct tttaaaaagg 420
gaanccantcc tgnctctttt caaatttt 448

<210> 89

<211> 463

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[463]

<223> n = A,T,C or G

<400> 89

gaattttgtg cactggccac tgtgatggaa caattgggce aggatgcttt gagttcatca 60
gtagtgattc tgccaaagt ttgtgtgtaa catgagtatg taaaatgtca aaaaattagc 120
agaggtctag gtctgcatat cagcagacag tttgtccgtg tattttgtag ccttgaagtt 180
ctcagtgaac agttnntctt gatgcgaagt tctnatcca gtgttttagt cctttgcate 240
tttnatgtn agacttgcct cttnaaatt gcttttgtnt tctgcaggta ctactgtgg 300
tttaacaaaa tagaannact tctctgcttn gaanatttga atatcttaca cctnaaaatn 360
aattctctcc ccatannaaa acccangccc ttggganaat ttgaaaaang gntcctctnn 420
aattcnana anttcagntn tcatacaaca naacngganc ccc 463

<210> 90

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[400]

<223> n = A,T,C or G

<400> 90

agggattgaa ggtctntnt actgtcggac tgttcancca ccaactctac aagttgctgt 60
cttccactca ctgtctgtaa gcntnttaac ccagactgta tcttcataaa tagaacaat 120
tcttcaccag tcacatcttc taggaccttt ttggattcag ttagtataag ctcttccact 180
tctttgtta agacttcate tggtaaagtc ttaagttttg tagaaaggaa ttttaattgt 240

```

cggtctctaa caatgtcttc tcttgaagt atttggctga acaacccacc tnaagtcctt 300
ttgtgcatcc atttkaata tacttaatag ggcattggtn cactaggtta aattctgcaa 360
gagtcattctg tctgcaaaag ttgogttagt atatctgcca 400

```

```

<210> 91
<211> 480
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

```

```

<400> 91
gagcteggat ccaataatct ttgtctgagg gcagcacaca tatncagtgc catggnnaact 60
ggctctacccc acatgggagc agcatgccgt agntatataa ggtcattccc tgagtcagac 120
atgctctctt gactacogtg tgcagtgct ggtgattctc acacacctcc nncogctctt 180
tgtggaaaaa ctggcacttg nctggaaacta gcaagacate acttacaat tcacctacga 240
gacacttgaa aggtgtaaca sagcgactct tgcattgctt tttgtccctc cggcaccagt 300
tgtcaatact aaccgctgg ttgtcctcca tcacatttgt gatctgtagc tctggataca 360
tctctgaca gtactgaaga actctctctt ttgtttcaaa agcaactctt ggtgctgtt 420
ngatcagggt cccatttccc agtcgaatg ttcacatggc atatnttact tcccacaaaa 480

```

```

<210> 92
<211> 477
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(477)
<223> n = A,T,C or G

```

```

<400> 92
atacagccca nateccacca cgaagatgog cttgttgact gagaacctga tgcggtcact 60
ggctccogctg tagcccccagc gactctccac ctgctggaag cgggtgatgc tgcactctt 120
cccacgcagg cagcagcggg gccgggtcaat gaactccact cgtggcttgg gggtgacgg 180
taantgcagg aagaggtgta ccacctcgog gtccaccagg atgcccagct gtgcgggacc 240
tgcagogaaa ctctogatg gtcabgagcg ggaagcgaat gangcccagg gccttgccc 300
gaaccttccg cctgttctct ggcgtcacct gcagctgctg ccgctnacac tgggcctgg 360
accagcggac aaacggcggt gaacagccgc acctcacgga tgcacantgt gtcgcgtcc 420
aggaaoggen ccagcgtgct caggtcaatg tcggtgaanc ctccgoggt aatggog 477

```

```

<210> 93
<211> 377
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(377)
<223> n = A,T,C or G

```

```

<400> 93
gaacggctgg accttgcttc gcattgtgct gctggcagga atacctggc aagcagctcc 60
agtcogagca gccccagacc gctgcggccc gaagetaagg ctgcctctgg ccttccctc 120
cgctcctatg cagaaccant agtgggagca ctgtgtttag agttaagagt gaacactgt 180

```

```

tgattttact tgggaatttc ctctgttata tagcttttcc caatgctaatt ttccaaacaa 240
caacaaacaaa ataacatggt tgcctgtttna gttgtatataa agtangtgat tctgtatnta 300
aagaaaatat tactgttata tatactgctt gcaanttctg tatttatggg tnccttggaa 360
ataaatatat tattaas 377

```

<210> 94

<211> 495

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(495)

<223> n = A,T,C or G

<400> 94

```

ccctttgagg ggttaggggc cagttcccag tggaaagaac aggccaggag aantgcgtgc 60
cgagctgagc cagatttccc acagtgaccc cagagccctg ggtatatgtc tctgacccct 120
ccaagggaag accaccttct ggggacatgg gctggagggc aggacctaga ggcaccaagg 180
gaaggcccca ttccggggct gttcccagag gaggaaggga aggggctctg tgtgcccccc 240
acgaggaana ggccctgant cctgggatac naccacctt cactgtgtac cccacacaaa 300
tgcaagctca ccaaggctcc ctctcagtc cttccctaca cctgaacgg ncactggccc 360
acacccarcc agancancca cccgccatgg ggaatgttct caaggaaatcg cngggcaacg 420
tggactctng tcccnnaagg ggcagaatc tccartagan gganngaacc cttgctnana 480
aaaaaaaaaa aaaaaa 495

```

<210> 95

<211> 472

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(472)

<223> n = A,T,C or G

<400> 95

```

ggttaacttg tttcattgcc accacttagc ggatgtcatt tagaaccatt ttgtctgtc 60
ctcttggaag ccttgocag agcggacttt gtaattgttg gagaataact gctgaatttt 120
tagctgtttt gacttgatcc gcaccactgc accacaactc aatatgaaaa ctatttnact 180
tatttattat cttgtgaaaa gtatacaatg aaaattttgt tcatactgta tttatcaagt 240
atgatgaaaa gcaatagata tataattctt tattatgttn aattatgatt gccattatta 300
atcggcaaaa tgtggagtgt atgttctttt cacagtaata tatgcctttt gtaacttcac 360
ttggttattt tattgtaat gaattacaaa attcttaatt taaggaaatg gtangttata 420
tttanctcan taatttctt ccttgtttac gtttaattttg aaangaatgc at 472

```

<210> 96

<211> 476

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(476)

<223> n = A,T,C or G

<400> 96

```

ctgaagcatt tcttcaact tntctacttt tgtcattgat acctgtagta agttgacaat 60

```

```

gtgggtgaaat ttcaaaatta tatgtaactt ctactagttt tactttctcc cccaagtctt 120
ttttaactca tgatttttcc acacacacac cagaacttat tatatagcct ctaagtcttt 180
attcttcaca gtatgtgatg aaagagtcct ccagtgtctt gngcanaatg ttctagntat 240
agctggatac atcngtggg agttctataa actcatacct cagtgggact naaccasaaat 300
tgtgttagtc tcaattccta ccacactgag ggagcctccc aaatcactat attcttatct 360
gcaggctact cccagaaaa acngacaggg caggcttgca tgaanaagtn acatctgctt 420
tacaagctct acttctctca nangtctgtn aaggaacaat ttaattctct agcttt 476

```

<210> 97

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (479)

<223> n = A,T,C or G

<400> 97

```

actcttctat atgtgatat gatcttgagt ataagaatgc atatgtcact agaattggata 60
aaataatgct gcaaaactta tgttcttatg caaaatggaa cgctaattgaa acacagctta 120
caatcgcaaa tcaaaaactca caagtgtcta tctgttgtag atttagtgta ataagactta 180
gattgtgctc cttaggatat gattgttctc canatcttgg gcaatnttcc ttagtcaaat 240
caggctacta gaattctggt atgggatatn tgagagcatg aaatttttca naatacactt 300
gtgattatna aattaatcac aaatttcaat tatacctgct atcagcagct agaaaaarat 360
ntnnttttta natcaaaagta ttttgtgttt ggaantgttn aaatgaaatc tgaatgtggg 420
ttcatcttta ttttttcccn gacnactant tnttttttta gggctatctc tganccatc 479

```

<210> 98

<211> 461

<212> DNA

<213> Homo sapien

<400> 98

```

agtgaactgt cctccaaaca aaccccttga tcaagtttgt ggcactgaca atcagaccta 60
tgctagtctc tgctatctat tgcctactaa atgcagactg gaggggacca aaaaagggca 120
tcaactocag ctggattatt ttggagcctg caaatctatt cctacttgta cggactttga 180
agtatttcag ttctctctac ggatgagaga ctggctcaag aatatcttca tgcagcttta 240
tgaagccact ctgaacacgc tggttatcta gatgagaaca gagaataaaa gtccgaaaat 300
ttacctggag aaaaaggggc ttggctgggg accatcccat tgaaccttct ctttaaggact 360
ttaagaaaaa ctaccacatg ttgtgtatcc tgggtcgggc cgtttatgaa ctgaccaccc 420
tttggataaa tcttgacgtc cctgaacttg ctctcttgcc a 461

```

<210> 99

<211> 171

<212> DNA

<213> Homo sapien

<400> 99

```

gtggcgcgcg gcagggtgtt cctegtaaccg caggggcccc tcccttcccc aggcgtccct 60
cggcgctctt gcggggccga ggaggagcgg ctggcgggtg gggggagtgt gacccaccct 120
cgggtgagaa agccttctct agcgatctga gaggcgtgcc ttgggggtac c 171

```

<210> 100

<211> 269

<212> DNA

<213> Homo sapien

<400> 100

cggccgcraag	tgcaactcca	gctggggccg	tcgggacgaa	gattctgcca	gcagttggte	60
cgactgogac	gacggggcg	gogacagtcg	cagggtgcagc	gcggggccct	ggggtcttgc	120
aaggctgagc	tgacgcogca	gaggtcgtgt	cacgtccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagccoggt	gaagcgggag	gcctcgggga	gcccctcggg	aaggcgggcc	240
cgagagatac	gcaggtgcag	gtggccgce				269

<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

tttttttttt	ttttggaatc	tactgogagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggta	gggatgggt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgtcttlatg	ggggcgggg	ggggtagggg	aaacgaagca	aataacatgg	180
agtgggtgca	ccctccctgt	agaacctgg	tacaaagctt	ggggcagttc	acctggctctg	240
tgaccgtcat	ttttttgaca	tcaatgttat	tagaagtcag	gatattcttt	agagagtcca	300
ctgtttctga	gggagattag	ggtttcttgc	caaatccaac	aaatccact	gaaaagttg	360
gatgatcagt	acgaataccg	aggcatatcc	tcatatcgg	ggcca		405

<210> 102

<211> 470

<212> DNA

<213> Homo sapien

<400> 102

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
ggcaacttaac	ccatttttat	ttcaaaatgt	ctacaaatct	aatccatta	tacggtatct	120
tcaaaatcta	aattatttca	attagccaaa	tccttaccac	ataataccca	aaaatcaaaa	180
atatacttct	ttcagcaaac	ttgttacata	aattaaaaaa	atatatacgg	ctgggtgttt	240
caaagtacaa	ttatcttaac	actgcacaca	tttcaaggaa	ctaaaataaa	aaaaaacact	300
ccgcaaaagt	taaaagggaac	aaacaaattct	cttaccacac	cattataaaa	atcatctctc	360
aaatcttagg	ggaatctata	cttcaacagg	gatcttaact	tttactcact	ttgtttattt	420
cttttaacca	ttgtttgggc	ccaacacaa	ggaatccccc	ctggaactagt		470

<210> 103

<211> 581

<212> DNA

<213> Homo sapien

<400> 103

tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaabggaaa	ctgccttaga	tacataatto	ttaggaaata	gcttaaaatc	tgccataaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaac	atccaaattc	240
attttctctg	tctttaaaa	tatctaatct	ttccattttt	tcctatttcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaaa	ggaagagaaa	tggcacacaa	aaacaaacatt	ttatattcat	atttctacct	420
acgttaataa	aatagcattt	tgtgaagcca	gctcaaaaga	aggetttagat	ccttttatgt	480
ccatttttagt	cactaaacga	tatcaaaagt	ccagaatgca	aaaggtttgt	gaacatttat	540
tcaaaaagcta	atataagata	tttcacatac	tcactcttct	g		581

<210> 104

<211> 578

<212> DNA

<213> Homo sapien

<400> 104

tttttttttt	tttttttttt	tttttttttt	cttttttttt	gaaatgagga	togagtcttt	60
cactctctag	atagggcctg	aagaaaaactc	atctttccag	ctttaaaata	acaatcaaat	120
ctcttatgct	atatcatatt	ttaagttaaa	ctaagtgaic	actggcttat	cttctctga	180
aggaatctg	ttcattcttc	tcattcatat	agttatatca	agtactacct	tgcataatga	240
gaggttttt	ttctctattt	acacatatac	ttccatgtga	atttgtatca	aacctttatt	300
ttcatgcaaa	ctagaaaaata	atgtttcttt	tgcataagag	aagagaacaa	tatagcatta	360
caaaactgct	caaattgttt	gttaagtatt	ccattataat	tagttggcag	gagctaatac	420
aaatcacatt	targacagca	ataataaaa	tgaagtaccc	gttaaatatc	caaaataaatt	480
aaaggaacat	ttttagcctg	ggtataatta	gctaattcac	cttacaagca	tttattagaa	540
tgaattcaca	tgttattatt	cctagcccaa	cacaatgg			578

<210> 105

<211> 538

<212> DNA

<213> Homo sapien

<400> 105

tttttttttt	tttttcagta	ataatcagaa	caatatttat	ttttatattt	aaaattcata	60
gaaaagtgc	ttacatttaa	taaaagtbtg	ttctctaaag	tgatcagagg	aattagatat	120
gtcttgaaca	ccaatattaa	tttgaggaaa	atacaccaaa	atacattaag	taaattattt	180
agatcatag	agcttgtaag	tgaadagata	aaatttgacc	tcagaaactc	tgagcattaa	240
aaatccacta	ttagcaata	aattactatg	gacttcttgc	tttaattttg	tgatgaatat	300
ggggtgtcac	tggtaaacca	acacattctg	aaggatacat	tacttagtga	tagattctta	360
tgtactttgc	taatacgtgg	atatgagttg	acaagtctct	ctttcttcaa	ctttttaagg	420
ggcgagaaat	gaggaagaaa	agaaaaggat	tacgcatact	gttctttcta	tggaaggatt	480
agatatgttt	cttttgccaa	tattaaaaaa	ataataatgt	ttactactag	tgaaccac	538

<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

tttttttttt	tttttttagtc	aagtttctat	ttttaattata	attaaagtct	tggtcatttc	60
atttacttagc	tctgcaactc	acatatttaa	attaaagaaa	cgtttttagac	aactgtacaa	120
cttataaatg	taagggtgcca	ttattgagta	atatattcct	craagagtgg	atgtgtccct	180
tctcccacca	actaatgaac	agcaacatta	gtttaatttt	attagttagat	atacactgct	240
gcaaaogcta	attctcttct	ccatccccat	gtgatattgt	gtatactgtgt	gagttggtag	300
aatgcattac	aactctcaat	caacagcaag	atgaagctag	gctgggcttt	cggtgaaaat	360
agactgtgtc	tgtctgaatc	aaatgatctg	acctatcctc	ggtggcaaga	actcttcgaa	420
ccgcttctct	aaaggcgctg	ccacatttgt	ggctctttgc	acttgtttca	aaa	473

<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

cgccatggca	ctgcagggca	tctcggtcat	ggagctgtcc	ggcctggccc	cgggcccggt	60
ctgtgtctatg	gtcctggctg	acttcggggc	gcgtgtggta	cgcgtggacc	ggcccggtc	120
cgcctacgac	gtgagccgct	tgggcccggg	caagcgtctg	ctagtgtctg	acctgaagca	180
gcgcggggga	gocgcogtgc	tggggcgctct	gtgcaagcgg	tggatgtgc	tgtggagcc	240
cttcgcgcgc	ggtgtcatgg	agaaactcca	gctgggccc	gagattctgc	agcgggaaaa	300
tccaaggctt	atttatgcc	ggctgagtg	atttggccag	tcagggaagct	tctgcgggtt	360
agctggccac	gatataact	atttggcttt	gtcagggtgt	ctctcaaaaa	ttggcagaag	420
tgggtgagaat	cgtatgccc	cgctgaattct	cctggctgac	tttctgtgtg	gtggccttat	480
gtgtgcactg	ggcattataa	tggctctttt	tgaccgcaca	cgcactgaca	agggtcagggt	540

```

cattgatgca aatatggtgg aaggaacagc atatttaagt ttttttttgt ggaaaactca 600
gaaatcgagt ctgtgggaag cactcgagg acagacatg ttggatggtg gagcaccitt 660
ctataogact tacaggacag cagatgggga attcattggt gtggagcaa tagaaccca 720
gtttacagag ctgctgatca aaggacttgg actaaagtct gatgaacttc ccaatcagat 780
gagcatggat gattggccag aatgaagaa gaagtttgca gatgtatttg caaagaagac 840
gaaggcagag tgggtgcaaa tctttgacgg cacagatgoc tgtgtgactc cggttctgac 900
ttttgaggag gttgttcac tctatcaca caaggaacgg ggctcgttta tccaccagtga 960
ggagcaggac gtgagccccc gccctgccc tctgctgtta aacaccccag ccattccctc 1020
tttcaaaagg gatcctttca taggagaaca cactgaggag atacttgaag aatttggatt 1080
cagccggogaa gagatttate agcttaactc agataaaatc attgaaagta ataaggtaaa 1140
agctagtctc taactctccag gccacaggct caagtgaatt tgaatactgc atttacagtg 1200
tagagtaaca cataacattg tatgcatgga aacatggagg aacagtatta cagtgtctta 1260
ccactctaatt caagaaaaga attacagact ctgattctac agtgatgatt gaattctaaa 1320
aatggttatc attagggctt ttgatttata aaactttggg tacttatact aaattatggt 1380
agttattctg ccttccagtt tgcctgatat atttgttgat attaagattc ttgacttata 1440
ttttgaatgg gttctagtga aadaggaatg atatatctt gaagacatcg atatacatbt 1500
atttacctc ttgattctac aatgtagaaa atgaggaaat gccacaaatt gtatggtgat 1560
aaagtcacg tgaascaaaa aaaaaaaan aaaaaaaan aaaaaaaan aaaaaaaan 1620
a 1621

```

<210> 108

<211> 382

<212> PRT

<213> Homo sapien

<400> 108

```

Met Ala Leu Gln Gly Ile Ser Val Met Glu Leu Ser Gly Leu Ala Pro
1 5 10 15
Gly Pro Phe Cys Ala Met Val Leu Ala Asp Phe Gly Ala Arg Val Val
20 25 30
Arg Val Asp Arg Pro Gly Ser Arg Tyr Asp Val Ser Arg Leu Gly Arg
35 40 45
Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
50 55 60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
55 70 75 80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
85 90 95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
100 105 110
Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115 120 125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
130 135 140
Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
145 150 155 160
Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
165 170 175
Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
180 185 190
Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
195 200 205
Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
210 215 220
Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
225 230 235 24
Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
245 250 255

```

Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
 260 265 270
 Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
 275 280 285
 Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
 290 295 300
 His His Asp His Asn Lys Glu Arg Gly Ser Phe Ile Thr Ser Glu Glu
 305 310 315 320
 Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala
 325 330 335
 Ile Pro Ser Phe Lys Arg Asp Pro Phe Ile Gly Glu His Thr Glu Glu
 340 345 350
 Ile Leu Glu Glu Phe Gly Phe Ser Arg Glu Glu Ile Tyr Gln Leu Asn
 355 360 365
 Ser Asp Lys Ile Ile Glu Ser Asn Lys Val Lys Ala Ser Leu
 370 375 380

<210> 109

<211> 1524

<212> DNA

<213> Homo sapien

<400> 109

ggcaagaggg	tgcgccagg	cctgagcgg	ggcgggggca	gcctcgccag	cgggggcccc	60
gggcctggcc	atgcctcact	gagccaggg	ctggcctct	acctcgccga	cagctggaac	120
cagtgcgacc	tagtggtct	cacctgcttc	ctcctgggg	tgggtgccc	gctgacccc	180
ggtttgatcc	acctggggcg	cactgtcttc	tgcctcgact	tcattggttt	cacgggtggg	240
ctgcttcaca	tcttcacgg	caacaaacag	ctggggccca	agatcgctat	cgtgagcaag	300
atgatgaagg	acgtgttctt	cttctctctc	tctctgggg	tgtggtggt	agcctatggc	360
gtggccacgg	aggggtctct	gagggcaggg	gacagtgaat	tcccaagtat	cctgcgcggc	420
gtcttctacc	gtccctacct	gcagatcttc	gggcagatcc	cccaggagga	catggacgtg	480
gcccctcagg	agcaccagaa	ctgctcgtcg	gagcccggt	tctgggcaca	ccctcctggg	540
gcccaggcgg	gcacctgct	ctcccagtat	gccaactggc	tgggtggtgt	gctcctcgtc	600
atcttctctg	tgtgggcca	catcctgctg	gtcaacttgc	tcattgcrat	gttcagttac	660
acattogga	aagtacagg	caacagcgat	ctctactgga	aggcgcagcg	ttacgccttc	720
atcggggaat	tccactctcg	gcccgcgctg	gcccgcgct	ttatcgctat	ctcccaactg	780
cgctcctgct	tcaggcaatt	gtgcaggcga	ccccggagcc	cccagccgtr	ctcccaggcc	840
ctogagcatt	tcgggttta	cttttctaag	gaagccgagc	ggaagctgct	aacgtgggaa	900
tgggtgata	aggagaactt	tctgctggca	cgcgctaggg	acaagcggga	gagcgactcc	960
gagcgtctga	agcgcacgtc	ccagaagggtg	gacttggcac	tgaacacagc	gggacacatc	1020
cgcgagtagc	aacagcgcct	gaaagtgtcg	gagcgggagg	tccagcagtg	tagccgcttc	1080
ctgggggtggg	tggcggaggc	cctgagccgc	tctgccttgc	tgcgccagg	tgggcggcca	1140
ccccctgacc	tgcctgggtc	caaagactga	gcccgtgctg	cggacttcaa	ggagaagccc	1200
ccacagggga	ttttgtctct	agagtaaggc	tcattctggc	ctgggcccc	gcacctgggtg	1260
gccttgtctc	tgaggtgagg	ccccgtgcca	tctggggcac	tgtcaggacc	acgtttggga	1320
gtgtcatctc	tacaaaccac	agcatgcccg	gctctccca	gaaccagtc	cagcctggga	1380
ggatcaaggc	ctggatcccg	ggcggttatc	catctggagg	ctgagggttc	cttggggtaa	1440
cagggaccac	agacccctca	ccactcacag	attcctcaca	ctggggaaat	aaagccattt	1500
cagaggaaaa	aaaaaaaaaa	aaaa				1524

<210> 110

<211> 3410

<212> DNA

<213> Homo sapien

<400> 110

gggaaccagc	ctgcacggc	tggctcggg	tgcagcggc	gcgcctcggc	caggatctga	60
gtgatgagac	gtgtccccac	tgaggtgccc	cacagcagca	gggtgtgagc	atgggctgag	120

aagctggacc	ggcaccacag	ggctggcaga	aatggggcgc	tggctgattc	ctaggcagtt	180
ggcggcagca	aggaggagag	gocgcagctt	ctggagcaga	gocgagacga	agcagttctg	240
gagtgccctga	acggcccccct	gagccctacc	cgccctggccc	actatgggtcc	agaggctgtg	300
ggtgagccgc	ctgctgcggc	accggaaagc	ccagctcttg	ctggtaacc	tgctaacctt	360
tggcctggag	gtgtgttttg	ccgcaggcat	caactatgtg	ccgctcttgc	tgctggaagt	420
gggggtagag	gagaagttca	tgaccatggg	gctgggcatt	ggtccagtgc	tgggctgggt	480
ctgtgtcccg	ctcttaggct	cagccagtga	ccactggcgt	ggaogctatg	gocgccgcg	540
gccccttcac	tgggcaactgt	ccttgggcct	cctgctgagc	ctctttctca	tcccaagggc	600
cggtcggcta	gcagggtgtg	tgtgcccggg	tcccaaggccc	ctggagctgg	cactgctcat	660
cctgggcgtg	gggtgtgtgg	acttctgttg	ccaggtgtgc	ttcactccac	tggaggccct	720
gctctctgac	ctcttcgggg	accgggacca	ctgtcgccag	gectactctg	tctatgcctt	780
catgatcagt	cttgggggct	gcttgggcta	cctcctgcct	gocattgact	gggacaccag	840
tgccttggcc	ccctacotgg	gcacccagga	ggagtgcctc	tttggcctgc	tcacccctcat	900
cttccctcacc	tgcgtagcag	ccacactgct	ggtggctgag	gaggcagcgc	tgggccccac	960
cgagccagca	gaagggtctgt	cgcccccttc	cttgcgcgcc	caactgtgtc	catgcagggc	1020
ccgtctggct	ttccgggaacc	tgggcgcctt	gcttccccgg	ctgcaccagc	tgtgctgcgc	1080
catgcccgcg	accctgcgcg	ggctcttogg	ggctgagctg	tgcagctgga	tggcactcat	1140
gaccttcaog	ctgtttttaca	cggatttogg	ggcgaggggg	ctgtaccagg	gogtgcacag	1200
agctgagcgg	ggcacccagg	cccgagagaca	ctatgatgaa	ggcgttcgga	tgggcagcct	1260
ggggctgttc	ctgcagtgeg	ccatctccct	ggtcttctct	ctggctcatgg	acggctgggt	1320
gcaggcagttc	ggcaactcgag	cagttctattt	ggccagtgtg	gcagctttcc	ctgtgggtgc	1380
cggtgcacac	tgcctgtccc	acagtgtggc	cggtgtgaca	gcttcagccg	ccctcacogg	1440
gttcaacttc	tcagccctgc	agatccctgc	ctacacacbg	gctccctctt	accacccggg	1500
gaagcaggtg	ttcctgcccc	aatacccgagg	ggacactgga	ggtgctagca	gtgagacag	1560
ccgtatgacc	agcttccctg	caggccctaa	gcttggagct	cccttcccta	atggacacgt	1620
gggtgtctga	ggcagtggcc	tgtctccacc	tccaccccg	ctctgcgggg	cctctgcctg	1680
tyatgtctcc	gtacgtgtgg	tgggtgggtga	gccccccgag	gcccagggtgg	ttccgggcgc	1740
gggcatctgc	ctggacctcg	ccatccctgga	tagtgccttc	ctgctgtccc	aggtggcccc	1800
atccctggtt	atgggtctca	ttgtccagct	cagccagctc	gtcactgctt	atattgtgtc	1860
tgcgcagggc	ctgggtcttg	tgcacattta	ctttgttaca	caggtagtat	tcgacacag	1920
cgacttggcc	aaatactcag	cgtagaaaac	ttccagcaca	ttggggtgga	gggctgtccct	1980
cactgggtcc	cagctccccc	ctcctgttag	ccccatgggg	ctgcggggct	ggccggcagt	2040
ttctgttgtt	gcccaggtaa	tgtggctctc	tgtctccacc	ctgtgtgtgt	gagggtgcga	2100
gctgcacagc	tgggggtgtg	ggcgtccctc	tctctctctc	ccagtctcta	gggctgcttg	2160
actggaggcc	ttccaaaggg	gttccagctc	ggacttatcc	agggaggcca	gaagggtccc	2220
atgcacttga	atgcggggac	tctgcagggt	gattaccacg	gctcagggtt	aacagctagc	2280
ctcctagttg	agacacaccc	agagaagggt	ttttgggagc	tgaataaact	cagtcacgtg	2340
gtttccacac	tctaagcccc	tttaacctgca	gottcgttta	atgtagctct	tgcattgggag	2400
ttcttaggat	gaaacactcc	tccatgggat	ttgaacatat	gacttatttg	taggggaaga	2460
gtccbtgagg	gcaacacaca	agaaccagggt	ccctccagcc	cacagcactg	tctttttgct	2520
gattccacccc	cctcttaact	tttatcagga	tgtggcctgt	tggctcctct	gttgccatca	2580
cagagacaca	ggcatttaaa	tatttaactt	atttatttta	caaagttaga	gggaatccat	2640
tgtatgcttt	tctgtgttgg	tgtctaatat	ttgggtaggg	tgggggatcc	ccaacaatca	2700
ggtcccccga	gatagtgtgt	cattgggtctg	atcattgcca	gaatcttctt	ctcctgggggt	2760
ctggcccccct	aaaatgccta	accagggacc	ttggaaatcc	tactcatccc	aaatgtaact	2820
tcacaaatgct	gttaccacag	gttaggggtgt	tgaagggaagg	tagagggtgg	ggcttcagggt	2880
ctcaacggct	tccttaacca	ccctctctct	cttggccccag	cctgggtccc	cccacttcca	2940
ctccctctca	ctctctctag	gactgggtctg	atgaaggcac	tgcccaaaat	ttccctctac	3000
cccaactttc	ccctaccccc	aactttccccc	accagctcca	caacccctgt	tggagctact	3060
gcaggacccag	aagcacaaaag	tgcgggttcc	caagcctctg	tccatctcag	ccccagaggt	3120
atatctgtgc	ttgggggaatc	tcacacagaa	actcaggagc	acccctgtgc	tgaactaagg	3180
gaggtcttat	cttccagggg	gggttttaagt	gcgctttgca	ataatgtcgt	cttatttatt	3240
tagcgggggtg	aatatttctat	actgtaagtgt	agcaatcaga	gtataatgtt	tatgggtgaca	3300
aaattaaagg	ctttctttata	tgttttaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	3360
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	3410

<210> 111

<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

```

agccaggcgt cccctctgct gccactcag tggcaacaco cgggagctgt tttgtccttt 60
gtggagcctc agcagttccc tctttcagaa ctacttgcca agagccctga acaggagcca 120
ccatgcagtg ctccagcttc attaagacca tgatgatcct ctccaatttg ctcatcttcc 180
tgtgtggtgc agccctgttg gcagtgggca tctgggtgtc aatogabggg gcaccccttc 240
tgaagacott cggggccactg tgcgccagt ccattgcagtt tgtcaaogtg ggtacttcc 300
tcategcagc cggcgctgtg gtctttgtct ttgggttctt gggtgctat ggtgctaaga 360
ctgagagcaa gctgcccctc gtgacgttct tcttcactct cctctcctc ttcattgctg 420
aggttgacgc tgcgtgtgtc gcttggtgt acaccacaat ggctgagcac ttcctgacgt 480
tgcgtgtagt gcctgccatc aagaaagatt atggttccca ggaagacttc actcaagtgt 540
ggaacaccac catgaaaggg ctcaagtgtc gtggcttcac caactatacg gattttgagg 600
actcacccta ctccaagag aacagtgctt tccccccatt ctgttgcaat gacaaagctc 660
ccaacacacg caatgaaacc tgcaccaagc aaaaggctca cgaacaaaaa gtagaggggt 720
gcttcaatca gcttttgtat gacatccgaa ctaattgcagt caccgtgggt ggtgtggcag 780
ctggaattgg gggcctogag ctggctgcca tgattgtgtc catgtatctg tactgcaatc 840
tacaataagt ccacttctgc ctctgccact actgctgcca catgggaact gtgaagaggg 900
accctggcaa gcagcagtgga ttgggggagg ggaraggatc taacaatgtc acttggggcca 960
gaatggacct gccctttctg ctccagactt ggggctagat agggaccact ccttttagcg 1020
atgctgact ttccttccat tgggtgggtg atgggtgggg ggcattccag agcctctaag 1080
gtagccagtt ctgttgccca tccccccagt ctattaaacc ctgatatgc cccctaggcc 1140
tagtgggat cccagtgctc tactggggga tgagagaaag gcattttata gcttgggcat 1200
aagtgaatc agcagagcct ctgggtggat ggttagaagg caattcaaaa tgcataaacc 1260
tgttacaatg ttaaaaaaaa aaaaaaaaaa 1289

```

<210> 112

<211> 315

<212> PRT

<213> Homo sapien

<400> 112

```

Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val Asn Lys Gln
1 5 10 15
Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys Asp Val Phe
20 25 30
Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala
35 40 45
Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu
50 55 60
Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile Pro
65 70 75 80
Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys Ser Ser
85 90 95
Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala Gly Thr Cys
100 105 110
Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Val Ile Phe
115 120 125
Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu Leu Ile Ala Met Phe
130 135 140
Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn Ser Asp Leu Tyr Trp Lys
145 150 155 160
Ala Gln Arg Tyr Arg Leu Ile Arg Glu Phe His Ser Arg Pro Ala Leu
165 170 175
Ala Pro Pro Phe Ile Val Ile Ser His Leu Arg Leu Leu Leu Arg Gln
180 185 190
Leu Cys Arg Arg Pro Arg Ser Pro In Pro Ser Ser Pro Ala Leu Glu

```

195	200	205
His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr		
210	215	220
Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp		
225	230	235
Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val		
245	250	255
Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg		
260	265	270
Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly		
275	280	285
Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly		
290	295	300
Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp		
305	310	315

<210> 113

<211> 553

<212> PRT

<213> Homo sapien

<400> 113

Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala		
1	5	10
Gln Leu Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu		
20	25	30
Ala Ala Gly Ile Thr Tyr Val Pro Leu Leu Leu Glu Val Gly Val		
35	40	45
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly		
50	55	60
Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly		
65	70	75
Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile		
85	90	95
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu		
100	105	110
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly		
115	120	125
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu		
130	135	140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala		
145	150	155
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr		
165	170	175
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu		
180	185	190
Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu		
195	200	205
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly		
210	215	220
Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His		
225	230	235
Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu		
245	250	255
Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg		
26	265	270
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe		
275	280	285

Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
 290 295 300
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
 340 345 350
 Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
 370 375 380
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
 420 425 430
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
 435 440 445
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser
 450 455 460
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
 465 470 475 480
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 485 490 495
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
 500 505 510
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
 515 520 525
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
 530 535 540
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala
 545 550

<210> 114
 <211> 241
 <212> PRT
 <213> Homo sapien

<400> 114
 Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ile Phe Leu Cys Gly Ala Ala Leu Leu Ala Val Gly Ile Trp Val
 20 25 30
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
 50 55 60
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile
 85 90 95
 Phe Ile Ala Glu Val Ala Ala Ala Val Val Ala Leu Val Tyr Thr Thr
 100 105 110
 Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys
 115 120 125
 Asp Tyr Gly Ser Gln Glu Asp Phe Thr Gln Val Trp Asn Thr Thr Met

130	135	140
Lys Gly Leu Lys Cys Cys Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp		
145	150	155
Ser Pro Tyr Phe Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn		
155	160	165
Asp Asn Val Thr Asn Thr Ala Asn Glu Thr Cys Thr Lys Gln Lys Ala		
180	185	190
His Asp Gln Lys Val Glu Gly Cys Phe Asn Gln Leu Leu Tyr Asp Ile		
195	200	205
Arg Thr Asn Ala Val Thr Val Gly Gly Val Ala Ala Gly Ile Gly Gly		
210	215	220
Leu Glu Leu Ala Ala Met Ile Val Ser Met Tyr Leu Tyr Cys Asn Leu		
225	230	235
Gln		240

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115	
gctctttctc tccctctctc tgaatttaac tctttcaact tgcattttgc aaggattaca	60
catttcaactg tgatgtatat tgtgttgcaa aaaaaaaaaa gtgtctttgt ttaaaattac	120
ttggtttgtg aatccatctt gctttttccc cattgggaact agtcattaac ccctctctga	180
actggttagaa aaacatctga agagctagtc tctcagcctc tgacagggtga attggatggt	240
tctcagaacc atttcaccca gacagcctgt ttctatcctg tttataaat tagtttgggt	300
tctctacatg cataacaaac cctgctccaa tctgtccatc aaaagtctgt gacttgaagt	360
ttagtc	366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(282)
 <223> n = A,T,C or G

<400> 116	
acaaagatga accatttctt atattatagc aaaattaaaa tctaccctga ttctaattatt	60
gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa	120
agactttact attttcatat tttaagacac atgatttacc ctattttagt aaactgggtc	180
ataggttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt	240
tcaatctnga actatctana tcacagacat ttctattcct tt	282

<210> 117
 <211> 305
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(305)
 <223> n = A,T,C or G

<400> 117


```

acacatgtog cttcactgcc ttcttagatg cttctgggtca acatanagga acagggacca 60
tatttatcct cctcctgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa 120
aataaggcaa aatatatgaa acaacaggtc togagatatt ggaatcagt caatgaagga 180
tactgatccc tgatcactgt cctantgcag gatgtgggaa acagatgagg tcacctctgt 240
gactgccccg gettactgcc tctagagagt ttctangctg cagttcagac agggagaaat 300
tgggt 305

```

```

<210> 118
<211> 71
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(71)
<223> n = A,T,C or G

```

```

<400> 118
accaaggtgt ntgaetctct gacgtgggga tctctgatto ccgcacaatc tgagtggaaa 60
aantcctggg t 71

```

```

<210> 119
<211> 212
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(212)
<223> n = A,T,C or G

```

```

<400> 119
actccgggtg gtgtcagcag cactgtggcat tgaacatngc aatgtggagc ccaaacacaa 60
gaaaatgggg tgaantggc caactttcta tnaacttatg ttggcaantt tgcaccaaac 120
agtaagctgg cccttctaataaaaagaaat tgaaggttt ctcactaanc ggaattaant 180
aatggantca aganactccc aggcctcagc gt 212

```

```

<210> 120
<211> 90
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(90)
<223> n = A,T,C or G

```

```

<400> 120
actcgttgca natcaggggc ccccagagt caccgttgca ggagtccttc tggctcttgc 60
ctccgcgggc gcagaacatg ctgggtgggt 90

```

```

<210> 121
<211> 218
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature

```

<222> {1}... (218)
 <223> n - A, T, C or G

<400> 121
 tgtanogtga anaogacaga nagggttgc aaaaatggag aanccttgaa gtcattttga 60
 gaataagatt tgctaaaaga ttgggggcta aaacatgggt attgggagac atttctgaag 120
 atatncangt aaattangga atgaattcat ggttcttttg ggaattcctt taogatngcc 180
 agcatanact tcatgtgggg atancagcta cccctgtga 218

<210> 122
 <211> 171
 <212> DNA
 <213> Homo sapien

<400> 122
 taggggtgta tgcaactgta aggacaaaaa ttgagactca actggcttaa ccaataaagg 60
 catttgtag ctcatgggac aggaagtcgg atggtggggc atcttcagtg ctgcattgag 120
 caccaccccg gcgggggtcat ctgtgccaca ggtccctgtt gacagtgcgg t 171

<210> 123
 <211> 76
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (76)
 <223> n = A, T, C or G

<400> 123
 tgtagcgtga agaenacaga atgggtgtgtg ctgtgtctatc caggaaacaca tttattatca 60
 ttatcaanta ttgtgt 76

<210> 124
 <211> 131
 <212> DNA
 <213> Homo sapien

<400> 124
 acctttcccc aaggccaatg tectgtgtgc taactggccg gctgcaggac agtgcaatt 60
 caatgtgctg ggtcatatgg aggggaggag actctaaaat agccaatttt attctcttgg 120
 ttaagatttg t 131

<210> 125
 <211> 432
 <212> DNA
 <213> Homo sapien

<400> 125
 acctttatcta ctggctatga aatgatgggt ggaaaattgc gttaccaact ataccactgg 60
 cttagaaaag aggtgatagc tcttcagagg acttgtgact ttgtctcaga tgctgaagaa 120
 ctacagctcg catttggcag aaatgaagat gaatttggat taaatgagga tgctgaagat 180
 ttgcctcacc aaacaaaagt gaaacaactg agagaaaatt ttcaggaaaa aagacagtgg 240
 ctcttgaagt atcagtcact ttgagaatg tttcttagtt actgcatact tcatggatcc 300
 catgggtggg gtcttgcata tgtaagaatg gaattgattt tgcttttgcg agaattctcg 360
 caggaaacat cagaaccact attttctagc cctctgtcag agcaaacctc agtgcctctc 420
 ctctttgctt gt 432

<210> 126
 <211> 112
 <212> DNA
 <213> Homo sapien

<400> 126
 acacaacttg aatagtaaaa tagaaactga gctgaatttt ctatkcact ttctaaccat 60
 agtaagaatg atatttccc ccagggtaca ccaaatattt ataataatt gt 112

<210> 127
 <211> 54
 <212> DNA
 <213> Homo sapien

<400> 127
 accacgaaac cacaacaag atggaagcat caatccactt gccaaacaca gcag 54

<210> 128
 <211> 323
 <212> DNA
 <213> Homo sapien

<400> 128
 acctcattag taattgtttt gttgtttcat ttttttctaa tgtctccct ctaccagctc 60
 acctgagata acagaatgaa aatggaagga cagccagatt tctctcttg tctctgctca 120
 ttctctctga agtctaggtt acccattttg gggaccatt ataggcaata aacacagttc 180
 ccaaagcatt tggacagttt cttgttgtgt tttagaatgg tttccctttt tcttagcctt 240
 ttctgcataa aggtcactc agtcccttgc ttgtcagtg gactgggctc cccagggctt 300
 aggtgcctt cttttccatg tcc 323

<210> 129
 <211> 192
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(192)
 <223> n = A,T,C or G

<400> 129
 acatacatgt gtgtatatct tcaaatatca cttttgtatc actctgactt tttagcatac 60
 tgaatacaca ctacataat ttntgtgac catgatcaga tacaacccaa ctacattcatc 120
 tagccattc atctgtgata naaagatagg tgagtttcat ttctttcacg ttggccaatg 180
 gataaacaaa gt 192

<210> 130
 <211> 362
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(362)
 <223> n = A,T,C or G

<400> 130
 ccttttttta tggaaatgagt agactgtatg ttggaanatt taccacaaac ctctttgaca 60

```

tataatgacg caacaaaaag gtgctgttta gtctatgggt tcagtttatg cccctgacaa 120
gtttccattg tgttttgccg atctcttggc taatcgtggg atctcccatg ttattagtaa 140
ttctgtatcc cattttgtta acgctcggtg gatgtaacct gctangaggg taactttata 240
cttattttaa agctcttatt ttgttggtcat taaaatggca atttatgtgc agcactttat 300
tgcagcagga agcagctgtg ggttggttgt aaagctcttt gctaatttta aaaagtaatg 360
gg

```

<210> 131

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (332)

<223> n = A, T, C or G

<400> 131

```

ctttttgaaa gatcgtgtcc actcctgtgg acatcttggg ttaatggagt ttcccatgca 60
gtangactgg tatggttgca gctgtccaga taaaacatt tgaagagctc caaaatgaga 120
gtttcccatg gttgcctctg ctgctccaag tctcagcagc agcctctttt aggaggcatc 180
ttctgaacta gattaaggca gcttgtaaat ctgatgtgat ttggtttatt atccaactaa 240
cttccatctg ttatcactgg agaaagccca gactcccan gacnggtacg gattgtgggc 300
atanaaggat tgggtgaagc tggcgttgtg gt 332

```

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (322)

<223> n = A, T, C or G

<400> 132

```

acttttgcca ttttgtatat ataaacaatc ttgggacatt ctctgaaaa ctagggtgtcc 60
agtggctaag agaactcgat ttcaagcaat tctgaaagga aaaccagcat gacacagaat 120
ctcaaatcc caaacagggg ctctgtggga aaaaatgagg aggacotctt tatctcgggt 180
tttagcaagt taaaatgaan atgacaggaa aggettatct atcaacaaag agaagagttg 240
ggatgcttct aaaaaaaact ttggtagaga aaataggaat gctnaatcct aggggaagcct 300
gtaacaatct acaattggtc ca 322

```

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (278)

<223> n = A, T, C or G

<400> 133

```

acaagccttc acaagtttaa ctaaattggg attaatcttt ctgtanttat ctgcataatt 60
cttggttttc tttccatctg gctcctgggt tgacaatttg tggaaacaa cctatttgcta 120
ctattttaa aaaaacaaa atctttccct ttaagctatg ttnaattcaa actattcctg 180
ctattcctgt ttgtcgaag aaattatatt ttccaasata tgnatatttg ctctgatgggt 240

```

cccacgaacc actaatataa accacagaga ccagccctg 278

<210> 134

<211> 121

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(121)

<223> n = A,T,C or G

<400> 134

gttttataaaa cttgttttagc tccatagagg aaagaatgtt aaactttgta ttttataaaca 60
tgattctctg aggttaaaact tggttttcaa atgttatatt tacttgtatt ttgcttttgg 120
t 121

<210> 135

<211> 350

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(350)

<223> n = A,T,C or G

<400> 135

acttanaaac atgectagca catcagaatc cctcaaaaga catcagtata atcctatacc 60
atancaagtg gtgactgggt aagcgtgcga caaaggtcag ctggcacatt acttgtgtgc 120
aaacttgata cttttgttct aagtaggaac tagtatacag tncctaggan tggtaactca 180
gggtgcccc caactcctgc agccgctcct ctgtgcacag ccctgnaagg aactttcagc 240
ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgcctgag 300
ttcccaagga tgcaagcct ggtgctcaac tccctggggcg tcaactcagt 350

<210> 136

<211> 399

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(399)

<223> n = A,T,C or G

<400> 136

tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtc 60
gctgtgattg tatcogaata ntccctgtga gaaaagataa tgagatgaag tgagcagcct 120
gcagacttgc gtcctgcttc aanaagccag acagggaagg cctgcctgcc ttggctctga 180
cctggcgggc agccagccag ccacaggtgg gcttcttccct tttgtggtga caacnccaag 240
aaaactgcag agggccaggg tcagggtgtna gtgggtangt gaccataaaa caccaggtgc 300
tcccagggaac ccgggcaaag gccatcccca cctacagcca gcctgcccac tggcgtgatg 360
ggtgcagang gatgaagcag ccagntgttc tgctgtggt 399

<210> 137

<211> 165

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actgggtgttg tngggggtga tgcgtggtgtg anaagttgan gtgacttcen gatgggtgtgt 60
 ggaggaagtg tgtgaaogta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120
 ttggctggtc ccactgggtg tcaactgtcat tgggtgggtt cctgt 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138
 actcaactgga atgccacatt cacaacagaa tcagaggctt gtgaaaacat taatggctcc 60
 ttaacttttc cagtaagaat cggggacttg aaatggaaac gttaacagcc acatgcccaa 120
 tgcctgggcag tctcccatgc cttccacagt gaaagggtt gagaaaaatc acatccaatg 180
 tcatgtgttt ccagccacac caaaagggtg ttggggtgga gggctggggg catananggt 240
 cangcctcag gaagcctcaa gttccattca gctttgccac tgtacattcc ccatntttaa 300
 aaaaactgat gccctttttt tttttttttg taaaattc 338

<210> 139
 <211> 382
 <212> DNA
 <213> Homo sapien

<400> 139
 ggggaatcttg gtttttggca tctggtttgc ctatagccga ggcactcttg acagaacaaa 60
 gaaagggact togagtaaga aggtgattta cagccagcct agtgcocgaa gtgaaggaga 120
 attcaaaacag acctcgtcat tctggtgtg agcctggtcg gctcaccgcc tatcatctgc 180
 atttgcctta ctacaggtgt accggactct ggcctctgat gtctgtagtt tcacaggatg 240
 ccttatttgt cttctacacc ccacaggggc cctactctc tcggatgtgt ttttaataat 300
 gtcagctatg tgcctcatcc tccctcatgc cctccctccc tttctacca ctgctgagt 360
 gcttggaaat tgtttaagt gt 382

<210> 140
 <211> 200
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(200)
 <223> n = A,T,C or G

<400> 140
 accaaanctt cttctgttg tgttngattt tactataggg gtttngcttn ttctaaanct 60
 acttttcatt caacancctt tgttaagtgt caggtctgac tttgtccat anaattattg 120
 ttttcacatt tcaacttgta tgtgtttgtc tottanagca ttggtgaaat cacatatttt 180
 atattcagca taaggagaa 200

<210> 141
 <211> 335
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (335)
 <223> n = A,T,C or G

<400> 141
 accttatttt caaacactc atatgttgca aaaaacacat agaaaaataa agtttggtgg 60
 ggggtgctgac taaacttcaa gtcacagact tttatgtgac agattggagc aggggtttggt 120
 atgcatgtag agaaccctaa ctaatttatt aaccaggata gaaacaggct gtctgggtga 180
 aatggttctg agaaccctcc aattcactg tcagatgctg atanactagc ttttcagatg 240
 tttttctacc agttcagaga tnggttaatg actanttcca atggggaaaa agcaagatgg 300
 attcacaac caagtaattt taaacaaaga cactt 335

<210> 142
 <211> 459
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1) ... (459)
 <223> n = A,T,C or G

<400> 142
 accaggttta tattgcraca tatatccttt ccaattgcgg gctaaacaga cgtgtattta 60
 gggttgttta aagacaaccc agcttaatat caagagaaat tggacccctt catggagtat 120
 ctgatggaga aaacactgag ttttgacaaa tcttatttta ttcagatagc agtctgatca 180
 cacatgggtcc aacacactc aaataataaa tcaaatatna tcagatgtta aagettggtc 240
 ttcaaacatc atagccaatg atgcccgcct tgcctataat ctctccgaca taaaaccaca 300
 tcaaacactc agtggccacc aaaccattca gcacagcttc cttaactgtg agctgtttga 360
 agctaccagt ctgagcacta ttgactatnt ttttcangct ctgaantagc ctagggatct 420
 cagcanggggt gggaggaacc agtcaacct tgccgtant 459

<210> 143
 <211> 140
 <212> DNA
 <213> Homo sapien

<400> 143
 acatttctct ccaccaagtc aggactcctg gcttctgtgg gagttcttat cacttgaggg 60
 aaatccaaac agtctctctt agaaaggaat agtgtcacca accccaccca tctccctgag 120
 accatccgac ttcctgtgt 140

<210> 144
 <211> 164
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (164)
 <223> n = A,T,C or G

<400> 144

```

acttcagtta caacatacaa tascaacatt aagtgtatat tgcctatcttt gtcattttct 60
atctatacca ctctcccttc tgaaaacaan aatcactanc caatcaetta tacaattttg 120
aggcaattaa tccatatttg ttttcaataa ggaaaaaaag atgt 164

```

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(303)

<223> n = A,T,C or G

<400> 145

```

acgtagacca tccaactttg tatttgaat ggcaaacatc cagnagcaat tccataacaa 60
actggagggt atttataccc aattatccca ttcattaaca tgcctctctc ctccaggctat 120
gcaggacagc tatcataagt cggcccaggc atccagatac taccatttgt ataaacttca 180
gtaggggagt ccatccaagt gacaggtcta atcaaaggag gaaatgggac ataagcccag 240
tagtaaaatn ttgcttagct gaaacagcca caaaagactt accgcctggg tgattaccat 300
caa 364

```

<210> 145

<211> 327

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(327)

<223> n = A,T,C or G

<400> 146

```

actgcagctc aattagaagt ggtctctgac tttcatcanc ttctccctgg gctccatgac 60
actggcctgg agtgactcat tgctctggtt ggttgagaga gctcctttgc caacaggcct 120
ccaagtcagg gctgggattt gtttcttttc cacattctag caacatatg ctggccactt 180
cctgaacagg gaggggtggg gggagccagc tggaaacaagc tgccactttc taagtagcc 240
agaattgccc ctgggcctgt cacacctact gatgacctc tgtgctgca ggaatggaatg 300
taggggtgag ctgtgtgact ctatggt 327

```

<210> 147

<211> 173

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(173)

<223> n = A,T,C or G

<400> 147

```

acattgtttt tttagataa agcatcgana gagctctctt taacgtgaca caatggaagg 60
actggaaacac ataccacat ctttgttctg agggataatt ttctgataa gtcttgctgt 120
atattcaagc acatagtta tatattatc agttccatgt ttatagccta gtt 173

```

<210> 148

<211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{477}
 <223> n = A,T,C or G

<400> 148
 acaaacactt tatctcatcg aatttttaac ccaaaactcac tcaactgtgc ttcttatact 60
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactctact 120
 gccctactac ctgctgcaat aatcacattc cttctctgtc ctgacctga agccattggg 180
 gtggctccag tggccatcag tccangcctg cacccttgagc ccttgagctc cattgtcac 240
 nccanccac ctacccgccc ccatctctct acacagctac ctcttctgtc tctaacccca 300
 tagattatnt ccaaatcag tcaattaagt tactattaac actctaccgg acatgtccag 360
 caccactggt aagccttctc cagccaacac acacacacac acacncacac acacacatat 420
 ccaggcacag gctacctcat cttcacatc accccttta ttaccatgct atggtgg 477

<210> 149
 <211> 207
 <212> DNA
 <213> Homo sapien

<400> 149
 acagttgat tataatatac agaaataaac ttgcattgag agcattttag agggangaac 60
 taacgtatct tagagagcca aggaagggtt ctgtggggag tgggatgaa ggtggggcct 120
 gatgataaat aagagtcagc caggttaagt ggtggtgtgg tatgggcaca gtgaagaaca 180
 ttccaggcag agggaaacagc agtgaaa 207

<210> 150
 <211> 111
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{111}
 <223> n = A,T,C or G

<400> 150
 acottgattt cattgtgtgt ctgatggaaa cccaactatc taatttagct aaaacatggg 60
 cacttaaatg tggtcagtgt ttggacttgt taactantgg catctttggg c 111

<210> 151
 <211> 196
 <212> DNA
 <213> Homo sapien

<400> 151
 agcggggcag gtcatttga acattccaga tacttatcat tactcgatgc tgttgataac 60
 agcaagatgg ctttgaactc aggttcacca ccagctattg gaccttacta tgaaaccat 120
 ggataccaac cggaaaaccn ctatcccgca cagcccaactg tggccccac tgtctacgag 180
 gtgcattcgg ctcaagt 196

<210> 152
 <211> 132
 <212> DNA

<213> Homo sapien

<400> 152

```

acagcacttt cacatgtaag aaggagagaa ttctaaatg taggagaaag ataacagaac      60
cttccctctt tcatctagt gtgaaacct gatgcttat gttgacagga atagaaccag      120
gaggagattt gt                                     132

```

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(285)

<223> n = A,T,C or G

<400> 153

```

acaanacca nganaggcca ctggccgttg tgtcatggc tccaaacatg aaagtgtcag      60
cttctgtct tatgtctca tctgacact cttaccatt tttatctctg ctgacagga      120
gcacatcaat aaagtcacaa gtcttgact tggccttggc ttggaggaag tcatcaaac      180
cctggctagt gaggtgogg cgcgctcct ggatgacggc atctgtgaag togtgcacca      240
gtctgcaggc cctgtggaag cgcgctcac aaggagtnag gaatt                      285

```

<210> 154

<211> 333

<212> DNA

<213> Homo sapien

<400> 154

```

accacagtc tggtgggcca gggcttcctg accctttctg tgaanagcca tattatcacc      60
accccaaat ttctcttaa tatctttaac tgaaggggtc agcctcttga ctgcaaaagc      120
cctaagcogg ttacacagct aactccact ggccttgatt tgtgaaattg ctgctgctg      180
attggcaccg gactcgaagg tgttcagct cctctctcgg tggaaagaga ctctgatttg      240
agtttcacaa attctgggc cactctgtca ttgtctctct gaaataaat ccggagaatg      300
gtcaggcctg tctcatccat atggatcttc ogg                               333

```

<210> 155

<211> 308

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(308)

<223> n = A,T,C or G

<400> 155

```

actggaaata ataaaaccca catcacagt ttgtgtcaa gatcatcagg gcatggatgg      60
gaaagtgtt tgggaactgt aaagtgccta acacatgate gatgattttt gttataatat      120
ttgaatcacg gtgatacaa actctcctgc ctgctctctc tgggccccag cccagccccc      180
atcacagctc actgtctgt tcatccaggg ccagcatgta gtggctgatt cttcttggtc      240
gcttttagcc tccanaagtt tctctgaagc caaccacacc tctangtga aggcattgct      300
gccttggt                                     308

```

<210> 156

<211> 295

<212> DNA

<213> Homo sapien

<400> 156

```

accttgctcg gtgcttgga catatttagga actcaaaata tgagatgata acagtgccta      60
ttattgatta ctgagagAAC tgtagacat ttagttgaag atttttotaca caggaaactga      120
gaataggaga ttatgtttgg cctcatatt ctctccatc ctcttgccct cattctatgt      180
ctaatatatt ctcaatcaaa taagggttagc ataactagga aatcgaccaa ataccaatat      240
aaaaccagat gtctatcctt aagattttca aatagaaac aaattaacag actat          295

```

<210> 157

<211> 126

<212> DNA

<213> Homo sapien

<400> 157

```

acaagttaa atagtgtgt cactgtgcat gtgctgaat gtgaaatcca ccacatttct      60
gaagagcaaa acaaattctg tcatgtatc totatcttg gtctgggta tatctgtccc      120
cttagt                                     126

```

<210> 158

<211> 442

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (442)

<223> n = A,T,C or G

<400> 158

```

accactgggt ctggaaaca cccatcctta atacgatgat tttctctgctg tgtgaaatg      60
aancacagag gctgccccta gtcagtrctt ccttcacagag aaaaagagat ttgagaaagt      120
gctgggtgaa ttacacatta atttctccc ccaaactctc tgagtcttcc cttaatatctt      180
ctggctggttc tgaccaaagc aggtcatggg ttgttgagca ttgggatcc cagtgaagta      240
natgtttgta gccttgata cttagccctt cccacgcaca aacggagtg cagagtggg      300
ccaaacctgt tttccagtc cactagaca gattcacagt gcggaattct ggaagctgga      360
nacagacggg ctctttgcag agccgggact ctgagangga catgaggggc tctgcctctg      420
tgttcattct ctgatgtcct gt                                     442

```

<210> 159

<211> 498

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (498)

<223> n = A,T,C or G

<400> 159

```

acttccaggt aacgttgttg ttccgttga gcctgaactg atgggtgacg ttgtaggttc      60
tccaacaaga actgaggttg cagagcgggt agggagagat gctgttccag ttgcacctgg      120
gctgctgttg actgttgttg attcctcact aogggccaaag gttgtggaac tggcanaaag      180
gtgtgttgtt gganttgagc toggggggct gtggtaggtt gtgggtctct caacaggggc      240
tgctgttgtt ccgggagtg aagtggttgt gtcacttgag cttggccagc tctggaaagt      300
antanattct tcttgaagga cagcgttgtt ggagctggca ngggtcantg ttgtgtgtaa      360
cgaaccagtg ctgctgtggg tgggtgtana tctccacaa agcctgaagt tatggtgtcn      420
tcaggtaana atgtgttttc agtgtccctg ggctgctgtg gaaggttgtt nattgtcacc      480

```

aaggaataa gctgtggt

498

<210> 160

<211> 380

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> [1]...[380]

<223> n = A,T,C or G

<400> 160

```

acctgcattc agcttccctg ccaaaactcac aaggagacat caacctctag acagggaaac      60
agcttcagga tacttccagg agacagagcc accagcagca aaacaaatat tcccatgcct      120
ggagcatggc atagaggaag ctganaaatg tggggtctga ggaagccatt tgagtctggc      180
cactagacat ctcatcagcc acttgtgtga agagatgcc catgaccca gatgcctctc      240
caaccttac ctccatctca cacacttgag ctctccactc tgtataatc taacatctg      300
gagaaaaatg gcagtttgac cgaacctgtt cacaacggtg gaggtgatt tctaacgaaa      360
cttgtagaat gaagcctgga

```

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

```

actccacatc cctctcagc aggcgggtgt cgttcagggt gtatttggcc ttgcctgtca      60
cactgtccac tggccctta tccacttggg gcttaatccc tcgaagagc atgt      114

```

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

```

actttctgaa tcgaatcaaa tgatacttag tgtagtttta atatcctcat atatatcaaa      60
gttttactac tctgataaatt ttgtaaacca ggtaaccaga acatccagtc atacagcttt      120
tggtagata taacttggca ataaccagc ctggtgatac ataaactac tcaactgt      177

```

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(137)

<223> n = A,T,C or G

<400> 163

```

catttatara gacagcggtg aagacattca cgacaaaaac gcgaattct atcccgtagc      60
canagaaggc agctaoggt actcctacat cctggcggtg gtggccttcg cctgcacett      120
catcagcggc atgatgt

```

<210> 164

<211> 469

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(469)

<223> n = A,T,C or G

<400> 164

cttatcaca	tgaatgttct	cctgggcagc	gttgtgatct	ttgccacctt	cgtgacttta	60
tgcaatgc	catgtattt	cataccta	gagggagtc	caggagattc	aaccaggaaa	120
tgcatggatc	tcaaggaaa	caaaccaca	ataaactcgg	agtggcagac	tgacaactgt	180
gagacatgca	cttctacga	aacagaaatt	tcattgttga	cccttgttcc	tacacctgtg	240
ggttatgaca	aagacaactg	ccaaagaatc	ttcaagaagg	aggactgcaa	gtatatcgtg	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aattggataat	ctaattgtgt	360
tctagtaggc	acagggtccc	caggccaggc	ctcattctcc	tctggcctct	aatagtcact	420
gattgtgtag	ccatgcctat	cagtaaaaag	atnttttgagc	aaacacttt		469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(195)

<223> n = A,T,C or G

<400> 165

acagtttttt	atanatctcg	acattgcagg	cacttctgtt	cagtttccata	aagctggtgg	60
atccgctgtc	atccactatt	ccttggctag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	ccgcctgtag	ttctcgttcc	agtcgtcttg	gcacacaggg	tgccaggact	180
tcctctgaga	tgagt					195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 166

acatcttagt	agtgtggcac	atcagggggc	cattcagggtc	acagtcactc	atagcctggc	60
cgaggctcgg	gtccacacca	ccggtgtagg	tgtgtctcaat	cttgggcttg	gcgcccaact	120
ttggagaagg	gatatgtgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgcagacc	agcctgagca	aggggcggat	gttcagcttc	agctcctcct	tcgtcaggtg	240
gatgccaaac	tcgtctangg	tcctgtggga	gctggtgtcc	acntcaccta	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360
nggggccttt	ttggtgaact	ttc				383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> {1}... (247)
 <223> n = A,T,C or G

<400> 167
 acagagccag accctggcca taaatgaanc agagattaag actaaacccc aagtcganat 60
 tggagcagaa actggagcaa gaagtgggcc tggggctgaa gtagagacca aggccactgc 120
 tatanccata cacagagcca actctcagge caaggcnatg gttggggcag anccagagac 180
 tcaatctgan tccaaagtgg tggctggaac actggtcatg acanaggcag tgactctgac 240
 tgangtc 247

<210> 168
 <211> 273
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (273)
 <223> n = A,T,C or G

<400> 168
 acttctaagt tttctagaag tgggaaggatt gtanctatcc tgaatatggg tttacttcaa 60
 aatccctcan ccttggtctt carnactgtc tatactgana gtgtcatgtt tccacaaagg 120
 gctgacacct gagcctgnat tttcaactcat ccttgagaag cctttccag tagggctggg 180
 aattcccaac ttcttgcca caagcttccc aggccttctc ccttggaana ctccagcttg 240
 agtccagat acactcatgg gctgcccctgg gca 273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (431)
 <223> n = A,T,C or G

<400> 169
 acagccttgg cttccccaac ctccacagtc tcagtgcaga aagatcatct tccagcagtc 60
 agctcagacc agggtcacag gatgtgacat caacagtttc tggtttcaga acagggtctc 120
 ctactgtcaa atgacccccc atacttcttc aaaggctgtg gtaagttttg cacagggtgag 180
 ggcagcagaa agggggtant tactgatgga caccatcttc tctgtatact ccacactgac 240
 cttgccatgg gcaaaaggccc ctaccacaaa aacaatagga tcaactgctg gcaccagctc 300
 acgcacatca ctgacaaccg ggatggaaaa agaantgcca actttcatat atccaaactgg 360
 aaagtgatct gatactggat tcttaattac cttcaaaagg ttctgggggg catragctgc 420
 tgaacactg a 431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (266)
 <223> n = A,T,C or G

<400> 170

```

acctgtgggc tgggtgttta tgcctgtgac ggctgtgaa agggagtcca gaggtggagc      60
tcaaggagct ctgcaggcat ttgtccaanc ctctccanag canaggggagc aacctacact      120
ccccgctaga aagacaccag attggagctc tgggaggggg agttgggggtg ggcatttgat      180
gtatacttgt caectgaatg aangagccag agaggaanga gacgaanatg anattggcct      240
tcaaaactag ggggtctggca ggtgga      265

```

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1248)

<223> n = A,T,C or G

<400> 171

```

ggcagccaaa tcataaacgg cgaggactgc agccgcact cgcagccctg gcaggcggca      60
ctgggtcatgg aaaacgaatt gttctgtctg ggcgtcctgg tgcacccgca gtgggtgctg      120
tcagccgcac actgtttcca gaagtgagtg cagagctcct acaccatcgg gctgggcttg      180
cacagtcttg aggcgacca agagccaggg agccagatgg tggaggccag cctctcctga      240
cggcaccacag agtacaacag acccttgctc gctaacgacc tcatgtctcat caagtgggac      300
gaatccgtgt cogagtctga caccatccgg agcatcagca ttgcttcgca gtgcccacc      360
gcgggggaact cttgcctcgt ttctggctgg ggtctgtctg ogaacggcag aatgcctacc      420
gtgctgcagt gcytgaacyt gtccgtgggtg tctgaggagg tctgacgtaa gctctatgac      480
ccgctgtacc accccagcat gttctgcgcc ggccgagggg aagaccagaa ggactcctgc      540
aacggtgact ctgggggggc cctgatctgc aaoggggtact tgcaggggcct tgtgtcttcc      600
ggaaaagccc cgtgtggcca agttggcgtg ccaggtgtct acaccaacct ctgcaaatcc      660
actgagtggg tagagaaaac cgtccaggcc agttaactct ggggactggg aacctatgaa      720
attgaccccc aaatacater tgoggaagga attcaggaat atctgttccc agccctcctc      780
ccctcaggcc caggagtcca ggcgccccag cctcctcctc tcaaaccaag ggtacagatc      840
cccagccctc cctccctcag acccaggagt ccagaccccc cagccctcct tccctcagac      900
ccaggagtcc agccctcctc cctcagacc caggagtcca gaccccccag cccctcctcc      960
ctcagaccca ggggtccagg cccccaaccc ctctcctcct agactcagag gtccaagccc      1020
ccaaacccctc attccccaga cccagagggtc cagggtccag cccctcctcc ctcagaccca      1080
gcgggtccaat gccacctaga ctntccctgt acacagtgcc ccttgtgtgc acgttgaccc      1140
aaccttacga gttgggtttt catttttngt ccttttcccc tagatccaga aataaagttt      1200
aagagaagng caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa      1248

```

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(159)

<223> Xaa = Any Amino Acid

<400> 172

```

Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro
1           5           10           15
Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser
20           25           30
Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr
35           40           45
Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly

```

50	55	60
Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu		
65	70	75
Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe		80
	85	90
Cys Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser		95
	100	105
Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe		110
	115	120
Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn		125
	130	135
Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser		140
145	150	155

<210> 173
 <211> 1265
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (1265)

<223> n = A,T,C or G

<400> 173	
ggcagccgcg actgcagcc ctggcaggcg gcactgggtca tggaaaaaga attgttctgc	60
tggggcgctc tgggtgcaccc gcagtgggtg ctgtcagccg cacactgttt ccagaactcc	120
tacaccatcg ggttgggctt gcacagtctt gaggccgacc aagagccagg gagccagatg	180
gtggaggcca gcctctccgt acggcaccca gagtacaaca gacccttgcg cgctaaccgac	240
ctcatgctca tcaagtttga cgaatccgtg tcagagtctg acaccatccg gagcatcagc	300
attgcttcgc agtgccttac cgcgggggaa tcttgctcgy ttcttggctg gggctctgctg	360
gcgaacgggtg agctcagggg tgtgtgtctg cctctttcaa ggaggctcctc tgcccagtcg	420
cgggggctga cccagagctc tgcgtcccag gcagaatgco taccgtgctg cagtgcgtga	480
acgtgtcggg ggtgtctgag gaggtctgca gtaagctcta tgaccgctg taccacccca	540
gcattgttctg cgcgggcggg gggcaagacc agaaggactc ctgcaagggt gactctgggg	600
ggcccttgat ctgcaacggg tactttgcagg gccttctgtc ttccggaaaa gccccgtgtg	660
gccaagttgg cgtgccaggt gtctacaaca acctctgcaa attcactgag tggatagaga	720
aaacggtcca ggcagtttaa ctctggggac tgggaaccca tgaattgac ccccaaatat	780
atcttgcggg aggaattcag gaatatctgt tcccagcccc tccctcctca ggcccaggag	840
tccaggcccc cagccctccc tccctcaaac caagggtaca gatcccragc cctcctccc	900
tcagacccag gagtccagac ccccagccc ctctctccctc agacccagga gtccagcccc	960
tcctcctcca gaccaggag tccagacccc ccagccctc ctccctcaga cccaggggtt	1020
gagggcccca accctctctc ctccagagtc agagggtcaa gcccccaccc cctagtctcc	1080
cagacccaga ggttnaggtc ccagccctc ttccttcaga cccagnggtc caatgccacc	1140
tagattttcc ctgnacacag tgccccttg tgganngttg acccaacctt accagttggg	1200
tttccatttt tngtcccttt cccctagatc cagaaataaa gtttaagaga nngcaaaaa	1260
aaaaa	1265

<210> 174
 <211> 1459
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (1459)

<223> n = A,T,C or G

<400> 174

gggcagcgcg	acactgtttc	cagaagtgag	tgcagagctc	ctacaccatc	gggctggggc	60
tgcacagtct	tgaggccgac	caagagccag	ggagccagat	ggtggaggcc	agcctctccg	120
tacgggaccc	agagtagaac	agacccttgc	tgcctaaccg	cctcatgctc	atcaagttag	180
acgaatccgt	gtccgagttc	gacaccatcc	ggagcatcag	cattgcttcg	cagtgcctta	240
ccgcggggaa	ctcttgcttc	gtttctggct	gggtctctgt	ggcgaaaggc	gagctcacgg	300
gtgtgtgtct	gccctcttca	aggaggctct	ctgcccagtc	gcgggggctg	accragagct	360
ctggctccca	ggcagaatgc	ctaccgtgct	gcagtgcgtg	aacgtgtcgg	tgggtgtctga	420
ngaggctctg	antaagctct	atgaccogct	gtaccacccc	ancatgttct	gcgcccggcg	480
agggcaagac	cagaaggact	cctgcaacgt	gagagagggg	aaaggggagg	gcaggcgact	540
caggggaagg	tggagagggg	ggagacagag	acacacaggg	cgcctggggg	agatgcagag	600
atggagagac	acacagggag	acagtgacaa	ctagagagag	aaactgagag	aaacagagaa	660
ataaacacag	gaataaagag	aagcaaggga	agagagaaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccaaca	gcattggggc	tgaggcggtg	780
gacctccacc	caatagaaaa	tcctcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacca	ataacataaa	tagtcgattt	atgcatacgt	900
tctatgcatc	catgatatac	ctttgttgga	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	ttttttaaat	tgttgcaact	ctcctaaaaa	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttgtgcat	tcaaacaggg	gttgttcaag	ggtcaactgt	1080
gtacccagag	ggaaacagtg	acacagatcc	atagaggtga	aacacggaag	gaacacggaa	1140
aaatcaagac	tctacaaaga	ggctggggcag	ggtggctcat	gcctgtaatc	ccagcacttt	1200
gggaggcgag	gcaggcgagat	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaaatacaaa	agttagctgg	atatgggtgg	aggcgctgtg	1320
aatcccagct	acttgggagg	ctgaggccgg	agaatttgct	gaatatggga	ggcagaggtt	1380
gaagtgaatt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (1167)

<223> n = A, T, C or G

<400> 175

ggcgagccct	ggcaggcggc	actggtcatg	gaaaaagaat	tgttctgtct	gggctgctct	60
gtgcatccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	caaccatcggt	120
ctgggctctg	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
ctctccgtac	ggcaccaga	gtacaacaga	ctcttctctg	ctaaccagct	catgctcctc	240
aagttaggag	aatccgtgtc	cgagtctgac	accatccgga	gcatacagat	tgcttcgcag	300
tgccctaccg	cggggaactc	ttgcctcgtn	cttggctggg	gtctgctggc	gaacggcaga	360
atgacctacc	tgctgcaactg	cgtgaacgtg	tcgggtggtg	ctgaggangt	ctgcagtaag	420
ctctatgacc	cgctgtacca	ccccagcatg	ttctgcggcg	gcggaggggc	agaccagaag	480
gaactcctga	acgggtgactc	tgggggggcc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtcttctg	gaaaagcccc	gtgtggccaa	cttggcgtgc	caggtgtcta	caaccaacctc	600
tgcaaatcca	ctgagtggat	agagaaaaac	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccca	aatacatcct	gcgggaangaa	ttcagggaata	tctgttccca	720
gccccctcct	cctcaggccc	aggagtccag	gccccagcc	cctcctccct	caaaaccaagg	780
gtacagatcc	ccagcccctc	ctccctcaga	cccagggtc	cagaccccc	agccccctnt	840
ccntcagacc	caggagtcca	gccccctcct	cntcagacgc	aggagtccag	acccccccagc	900
ccntcctccg	tcagatccag	gggtgcaggc	ccccaaaccc	tcntccntca	gagtcagagg	960
tcraagcccc	caacccctcg	ttccccagac	ccagaggtnc	aggtcccagc	ccctcctccc	1020
tcagaccag	oggtccaatg	ccacctagan	tnccctgtta	cacagtgcct	ccttgttgga	1080
ngttgaccca	accttaaccag	ttggttttct	attttttgtc	cctttccctc	agatccagaa	1140
ataaagtnta	agagaagcgc	aaaaaa				1167

<210> 176
 <211> 205
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...{205}
 <223> Xaa = Any Amino Acid

<400> 176
 Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1 5 10 15
 Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20 25 30
 Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35 40 45
 Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50 55 60
 Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65 70 75 80
 Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85 90 95
 Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
 100 105 110
 Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
 115 120 125
 Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
 130 135 140
 Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
 145 150 155 160
 Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
 165 170 175
 Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
 180 185 190
 Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
 195 200 205

<210> 177
 <211> 1119
 <212> DNA
 <213> Homo sapien

<400> 177
 ggcactgc agccctggca gggggactg gtcattgaaa acgaattgtt ctgctcgggc 60
 gtccctgggtgc atccgcagtg ggtgctgtca gccgcacact gtttccagaa ctccctacac 120
 atcgggctgg gctgcacag tcttgaggcc gaccaagagc caggagagca gatgggtggag 180
 gccagcctct ccgtacggca cccagagtac aacagacct tgcctgctaa cgacctcatg 240
 ctccatcaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct 300
 tcgcagtgc ctaccgoggg gaactcttgc ctggtttctg gctggggtct gctggcgaa 360
 gatgctgtga ttgcatcca gtcccagact gtgggaggct gggagtgtga gaagcttcc 420
 caaccctggc agggttgtac catttcggca acttccagtg caaggagtc ctgctgcato 480
 ctccctgggt gctcactact gctcactgca tcccccggaa cactgtgac aactagccag 540
 caccatagtt ctccgaagtc agactatcat gattactgtg ttgactgtgc tgtctattgt 600
 actaaccatg ccgatgttta ggtgaaatta gcgtcacttg gccccaacca tottggtatc 660
 cagttatcct cactgaattg agatttccctg ctccagtgtc agcattccc acataatttc 720
 tgacctacag aggtgaggga tcatatagct ctccaaggat gctgggtact cctccacaaa 780

```

ttcattttctc ctgttgtagt gaaagggtgcy cctctcggag cctcccaggg tgggtgtgca      840
ggtcacaatg atgaatgtat gatcgtgttc ccattaccca aagcctttaa atccctcctg      900
ctcagtagac cagggcaggt ctatgatttc ttcatttagt gtatgctgtc cttcatgca      960
accacotcag gactcctgga ttctctgect agttgagctc ctgcatgctg cctccttggg     1020
gaggtgaggg agagggccca tggttcaatg ggaatctgtg agttgttaaca cattaggtgc     1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaaaaa     1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)... (164)

<223> Xaa = Any Amino Acid

<400> 178

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1          5          10          15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20          25          30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35          40          45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
 50          55          60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65          70          75          80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85          90          95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100          105          110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115          120          125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130          135          140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145          150          155          160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

```

ctggagtgc ttggtgttc aagccctgc aggaagcaga atgcaccttc tgaggcacct      60
ccagctgccc cggccgggg gatgcgaggc tcggagcacc cttgcccggc tgtgattgct     120
gccaggcaat gtcatctca gctttctgt cctttgtctc cggcaagcg cttctgtgta     180
aagttcatat ctggagcctg atgtcttaac gaataaaggt cccatgctcc accogaaaaa     240
aaaaaaaaaa                                     250

```

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180
 actagtcacag tggggtggaa ttccattgtg ttggggcccaa cacaatgggt accttaaca 60
 tcacccagac cccgcccctg cccgtgcccc acgctgctgc taacgacagt atgatgtta 120
 ctctgtact cggaaactat ttttatgtaa ttaactgtatg cttctctgtt tataaatgac 180
 tgatttaaaa aaaaaaaaaa aa 202

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1} ... {558}

<223> n = A,T,C or G

<400> 181
 tccytgtgkt naggtttkkk agacacccck agacctwaan ctgtgtcaca gacttcyngg 60
 aatgttttagg cagtgcctag aatttcyctg taatgattct gttattactt tccctnattct 120
 ttattcctct ttctctctga gattaatgaa gtggaaaatt gaggtggata aatacaaaaa 180
 ggtagtgtga tagtataagt atctaagtgc agatgaaagt gtgttatata tatccattca 240
 aaattatgca agttagtaat tactcagggg taactaaatt accttaatat gctgttgaac 300
 ctactctgtt ccttggtctag aaaaaattat aacacaggact ttgttagttt gggaagccaa 360
 attgataata ttctatgttc taasagttgg gcatacata aattathtaag aatatggaw 420
 ttttattccc aggaatatgg xgttcatttt atgaatatta caorggatag awgtwtgagt 480
 aaaaycagtt ttggtwaata ygtwaatatg tcmataataa acaakgcttt gacttatitc 540
 caaaaaaaaa aaaaaaaaaa 558

<210> 182

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1} ... {479}

<223> n = A,T,C or G

<400> 182
 acagggwttk grggatgcta agcccccrga rwtggttga tccaacctg gcttwttttc 60
 agaggggaaa atggggccta gaagttacag mscatytagy tggtagcmty gcacccctgg 120
 cstcacacag astcccgagt agctgggact acaggccacac agtcaactgaa gcaggccctg 180
 ttwgcaattc acgttgccac ctccaactta aacattcttc atatgtgatg tccctagtca 240
 ctaaggttaa accttcccac ccagaaaagg caacttagat aaaatcttag agtactttca 300
 tactmttcta agtctctctc cagcctcact kkgagtccm cytgggggtt gataggant 360
 ntctcttggc ttctcgaata aartctctat yctctctatg ttttaatttg taccatara 420
 awtgstgara aaattaaaat gttctgggty mactttaaaa aaaaaaaaaa aaaaaaaaaa 479

<210> 183

<211> 384

<212> DNA

<213> Homo sapien

<400> 183
 agggggggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc 60
 agtaccagta ccaataacag tgccagtgcc agtgccagca ccagtggtag cttcagtgct 120
 ggtgccagcc tgacogccac tctcacattt gggctctctg ctggccttgg tggagctggt 180
 gccagcacca gtggcagctc tgggtgctgt ggtttctctt acaagtgaga ttttagatat 240

```

tgtaaatect gccagtcctt ctcttcaagg caggggtgcat cctcagaaac ctactcaaca 300
cagcactcta ggcagccact atcaatcaat tgaagttgac actctgcatt aratecattt 360
gpcatttcaa aaaaaaaaaa aaaa 384

```

```

<210> 184
<211> 496
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (496)
<223> n = A,T,C or G

```

```

<400> 184
accgaattgg gaccgctggc ttataagcga tcatgttynt ccrgtatkac ctcaargagc 60
agggagatcg agtclatacg ctgaagaaat ttgacccgat gggacaacag acctgctcag 120
cccatcctgc tgggttctcc ccagatgaca aatactctcg acaccgaatc accatcaaga 180
aacgcttcaa ggtgctcatg acccagcaac cgcgcctgt cctctgaggg tcccttaaac 240
tgatgtcttt tctgccacct gttacccctc ggagactcgg taaccaaac ctccggactg 300
tgagccctga tgcctttttg ccagccatac tctttggcat ccagtctctc gtggcgattg 360
attatgcttg tgtgaggcaa tcatggtggc atcaccataa aagggaaacac atttgacttt 420
tttttctcat attttaaatt actacmagaw tattwmagaw waaatgawtt gaaaaactst 480
taaaaaaaa aaaaaa 496

```

```

<210> 185
<211> 384
<212> DNA
<213> Homo sapien

```

```

<400> 185
gctggtagcc tatggcgkgy cccacggagg ggtcctcgag gccacggrac agtgacttcc 60
caagtatcyt ggcagcgctc ttctaccgtc cctacctgca gatcttcggg cagattcccc 120
aggaggacat ggaagtgagg ctcatggagc acagcaactg ytcgtcggag ccgggcttct 180
gggcacaccc tctggggccc caggcgggca cctgcgtctc ccagtatgcc aactggctgg 240
tggtgctgct cctgctcacc ttctgctcgg tggccaacat cctgctgggc aacttgctca 300
ttgccatgct cagttacaca ttgggcaaag tacagggcaa cagcgatctc tactgggaag 360
ggcagcggtt accgctctat ccgg 384

```

```

<210> 186
<211> 577
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (577)
<223> n = A,T,C or G

```

```

<400> 186
gagttagctc ctccacaacc ttgatgaggt ogtctgcagt ggcctctcgc ttcataccgc 60
tccatogtgc atactgtagg ttggccacca cytcctggca tcttggggcg gntaatatt 120
ccaggaaact ctcaatcaag tcaccgtoga tgaacctgt gggctgggtc tgtcttcgcg 180
tcggtgtgaa aggatctccc agaaggagtg ctcgatcttc cccacacttt tgatgacttt 240
attgagtoga ttctgcatgt ccagcaggag gttgtaccag ctctctgaca gtgaggtcac 300
cagccctatc atgctgttga mgtgcccga garcaccgag ccttgtgtgg gggkkgaggt 360
ctcaccaga ttctgcatta ccagagagcc gtggcaaaag acattgacaa actcgccag 420
gtggaaaaag amcamctcct ggargtgetn gccgctctc gtcmgttggg ggcagcgetw 480

```

tccttttgac acacaaacaa gttaaaggca ttttcagccc ccagaaantt gtcatcatcc 540
 aagatntegc acagcaactna tccagttggg attaaat 577

<210> 187
 <211> 534
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (534)
 <223> n = A,T,C or G

<400> 187
 aacatcttcc tgtataatgc tgtgtaatat cgatcrgatn ttgtctggtg agaatycatw 60
 actkgyaaaa gmaacattaa agcctggaca ctggtattaa aattcacaat atgcaacact 120
 ttaaaccagt tgtcaatctg ctcccyynac tttgtcatca ccagtctggg aakaagggta 180
 tgccctatcc acacctgtta aaagggcgct aagcattttt gattcaacat cttttttttt 240
 gacacaagtc cgaaaaaagc aaaagtaaac agttatyaat ttgttagcca attcacttcc 300
 ttcctgggac agagccatyt gatttassaa gcaaatlgca taatattgag cttggggagc 360
 tgatatttga gcggaagagt agcctttota cttcaccaga cacaactccc tttcatattg 420
 ggatgttnac naaagtwtg tctctwacag atgggagtgt tttgtggcaa ttctgttctg 480
 aggatctccc agtttattta ccacttgccac aagaaggcgt tttcttctc aggc 534

<210> 188
 <211> 761
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (761)
 <223> n = A,T,C or G

<400> 188
 agaaaccagt atctctnaaa acaacctctc ataccttctg gacctaatit tgtgtgctg 60
 tgbgtgtgcy cgcattattat atagacaggc acatcttttt tacttttgta aaagcttatg 120
 cctcttttgg atcttatctt gtgaaagttt taatgatctg ccataatgto ttggggacct 180
 ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtoaa tctagtngt 240
 tttattogac atgaaggaaa ttccagatn acaacctna caaactctcc ctkgackarg 300
 ggggacaaag aaaagcaaaa ctgacataaa raacacatwa cctggtgaga arttgcataa 360
 acagaaatwr ggtagtacat tgaarnacag catcatttaa rmgttwtktt wtctccctt 420
 gcaaaaaaca tgtacngact tcccgctgag taatgccaag ttgttttttt tatnataaaa 480
 cttgcccttc attacatggt tnaaagtggg gtggtgggoc aaaatattga aatgatggaa 540
 ctgactgata aagctgtata aataagcagt gtgcctaacc agcaacacag taatgttgac 600
 atgcttaatt cacaastgct aatttcatta taatgttttg ctaaaataca ctttgaacta 660
 tttttctgtn ttcccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac 720
 gaaaaataata acattgaaga aaaaananaa aaaaaaaa a 761

<210> 189
 <211> 482
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (482)
 <223> n = A,T,C or G

<400> 189

tttttttttt	tttgcgatn	ctactatttt	attgcaggan	gtgggggtgt	atgcaccgca	60
caccgggggt	atnagaagca	agaaggaagg	agggaggggca	cagccccctg	ctgagcaaca	120
aagcgccttg	ctgccttctc	tgtctgtctc	ctggtgcagg	cacatgggga	gaccttcccc	180
aaaggcaggg	ccaccagtc	aggggtggga	atacaggggg	tgggagtggt	gcataagaag	240
tgtatggcac	aggccaccog	gtacagaccc	ctcggctcct	gacaggtnga	tttcgaccag	300
gtcattgtgc	cctgcccagg	cacagcggtan	atctggaaaa	gacagaatgc	tttccctttc	360
aaatttggt	ngtcatngaa	ngggcatttt	tcccanttng	gctnggtctt	ggtaaccttg	420
gttcgggcca	gtccnctgc	caaaaantat	tcacccnnct	ccnaattgct	tgcnggnccc	480
cc						482

<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(471)

<223> n = A,T,C or G

<400> 190

tttttttttt	ttttaaaaca	gtttttcaca	acaaaattta	ttagaagaat	agtggttttg	60
aaaactctcg	catccagtga	gaactacatt	acaccacatt	acagctngga	atgtactcca	120
aattgtctgt	caaatgatac	aattggaacca	ttcaatctta	cacatgcacg	aaagaacaa	180
cgtcttttgc	atataatgca	caaaaaaa	aggggggggg	gaccacatgg	attaaaattt	240
taagtactca	tcacatacat	taagacacag	ttctagtcca	gtcnaaaatc	agaactgcnt	300
tgaaaaaatt	catgtatgca	atccaaacca	agaacttnat	tggtagatcat	gantncteta	360
ctacatcnac	cttgatcatt	gccaggaacn	aaaagttnaa	ancacnngt	acaaaaanaa	420
tctgtaattn	antccaacct	ccttacngaa	aaatnttntt	tatacactcc	c	471

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(402)

<223> n = A,T,C or G

<400> 191

gagggattga	aggctctgtc	taagtctggm	ctgttcagcc	accactctta	acaagtgtgt	60
gtcttccact	cactgtctgt	aagcttttta	accagacwg	tatcttcata	aatagaacaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggatto	agttagtata	agctcttcca	180
cttcttttgt	taagacttca	tctggtaag	tcttaagttt	tgtagaaagg	aattyaattg	240
ctogttctct	aacaatgtcc	tctccttgaa	gtatctgggt	gaacaaccca	cctaaagtcc	300
ctttgtgcat	ccatttttaa	tatacttaat	agggcattgk	tnactaggt	taaattctgc	360
aagagtcatc	tgtctgcaaa	agttgcgtta	gtatatctgc	ca		402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (601)

<223> n = A,T,C or G

<400> 192

gagctcggat	ccaaataatct	ttgtctgagg	gcagcacaca	tatncagtg	catggnnaact	60
ggtctacccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcytyttt	gaytaccgtg	tgccaagtgc	tggtgattct	yaacacacyt	ccatcccyt	180
cttttctgga	aaaactggca	cttkctctgga	actagcarga	catcacttac	aaattcaccc	240
acgagacact	tgaagaggtg	aacaagcgga	ytcttgcatt	gctttttgtc	cctccggcac	300
cagttgtcaa	tactaacccg	ctgggttgcc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tcttttgttt	caaaagcacc	tcttggtgoc	420
tgttggatca	ggttccattc	tcccagtcyg	aatgttcaca	tgccatattt	wacttcccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaatcctgt	tccggcattg	gctgcgaagc	540
cctcgatgta	gcccggccagc	gccaaaggcag	gcgcgctgag	ccccaccagc	agcagaagca	600
g						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (608)

<223> n = A,T,C or G

<400> 193

atacagccca	nateccacca	ogaagatgag	cttgttgact	gagaacctga	tgccgtcaact	60
ggtecccgctg	tagcccccagc	gactctccac	ctgctggaag	cggttgatgc	tgcaactcytt	120
cccaacgcag	gcagmagogg	gscogggtcaa	tgaactccay	tctgtggcttg	gggtkgacgg	180
tkaagtgcag	gaagaggctg	accactctgc	ggteccaccag	gatgcccgac	tgctgcgggac	240
ctgcagcgaa	actcctcgat	ggtcatgagc	gggaagcgaa	tgaggcccag	ggccttgccc	300
agaaaccttc	gcctgttctc	tggcgtcacc	tgcagctgct	gocgctgava	ctoggcctcg	360
gaccagoggc	caaaaggcrt	tgaacagccg	caactcaagg	atgcccagtg	tgctogogctc	420
caggamngsc	accagcgtgt	ccagggtcaat	gtcgggtgaag	ccctccgcyg	gtratggcgt	480
ctgcagtggt	tttgtcgatg	ttctccaggc	acagggtggc	cagctgcggg	tcactgaaga	540
gtcgcgcctg	cgtgagcagc	atgaaggcgt	tgctggcctcg	cagttcttct	tcagggaactc	600
cacgcaat						608

<210> 194

<211> 392

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (392)

<223> n = A,T,C or G

<400> 194

gaacggctgg	accttgcttc	gcattgtgct	tgctggcagg	gaataccttg	gcaagcagyt	60
ccagtcagg	cagccccaga	ccgctgcgcg	ccgaagctaa	gcctgcctct	ggccttcccc	120
tccgcctcaa	tgcaagaaca	gtagtgggag	cactgtgttt	agagttaaga	gtgaacactg	180
tttgatttta	cttgggaatt	tctctgttta	tatagctttt	cccaatgcta	atttccaaac	240
aaacaacaca	aaataacatg	tttgccctgtt	aaagtgtata	aaagttagtg	attctgtatt	300
taaagaaaat	attactgtta	catalactgc	ctgcaatttc	tgtattttatt	gkinctatgg	360
aaataaatat	agttatttaa	ggttgtcant	cc			392

<210> 195
 <211> 502
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (502)
 <223> n = A,T,C or G

<400> 195
 ccattkaggg ggtkagggkyc cagtttyccga gtggaagaaa caggccagga gaagtgcgtg 60
 ccgagctgag gcagatgttc ccacagtgc cccagagacc stgggatata gtytctgacc 120
 cctcncaaagg aaagaccacs ttctggggac atgggctgga gggcaggacc tagaggcacc 180
 aagggaaggc cccattccgg ggatgttccc caggaggga ggggaaggggc tctgtgtgac 240
 ccccaaggagg aagaggccct gagtccctgg atcagacacc ccttcacgtg tacccccaca 300
 caaatgcaag ctccaccaagg tcccctctca gtccccttc stacaccctg amcgccact 360
 ggcacacacc caccagagc acgcccaccg ccctggggar tgtgctoaag gartcgcnng 420
 gcacgtgga catctngtcc cagaaggggg cagaatctcc aategangga ctgarcmtt 480
 gctnanaaaa aaaaanaaaa aa 502

<210> 196
 <211> 665
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (665)
 <223> n = A,T,C or G

<400> 196
 ggtaacttgg ttctattgac accacttagt ggatgtcatt tagaaccatt ttgtctgctc 60
 cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt 120
 wagtgtttk gatttgatts gcaccactgc acccacaact tcaatatgaa aacyawttga 180
 actwatttat tatcttgtga aaagtataac aatgaaatt ttgttcctac tgtattkac 240
 aagtatgatg aaaagcaawa gatatacatt cttttattat gttaaattat gattgccatt 300
 attaatcggo aaaatgtgga gtgtatgttc ttttcacagt aatatatgcc ttttgtaact 360
 tcaattgggt attttattgt aaatgarta caaaattcct aatttaagar aatggatgt 420
 watatttatt tcaattaattt ctttcotkgt ttaogtwant ttgaaaga wtgcattgatt 480
 tcttgacaga aatcgatctt gatgctgtgg aagtatgttg acccacatcc ctatgaattt 540
 ttcttgaat gtataaagggt ttagcccat cnaacttcaa agaaaaaat gaccacatac 600
 ttgcaatca ggtgaaatg tggcatgctn ttctaattcc aactttataa actagcaaan 660
 aagtg 665

<210> 197
 <211> 492
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (492)
 <223> n = A,T,C or G

<400> 197
 ttttntttt ttttttttgc aggaaggatt ccatttattg tggatgcatt ttcacaatat 60
 atgtttattg gagcgatcca ttatcagtga aaagtatcaa gtgtttataa natttttagg 120

```

aaggcagatt cacagaacat gctngtcngc ttgcagtttt acctegtana gatnacagag 180
aattatagtc naaccagtaa acnaggaatt tactttttaa aagattasat ccaactgaa 240
caaaattcta cctgaaact tactccatcc aaatatgga ataanagtca gcagtatac 300
attctcttct gaactttaga tttctagaa aaatatgtaa tagtgatcag gaagagctct 360
tggtcaaaag tacaacnaag caatgttccc ttaccatagg ccttaattca aactttgatc 420
catttcactc ccatcacggg agtcaatgct acctgggaca cttgtatttt gttcatnctg 480
ancntggctt aa 492

```

<210> 198

<211> 478

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(478)

<223> n = A,T,C or G

<400> 198

```

ttnttttgn atttcantct gtannaanta ttttcattat gtttattana aaaatatnaa 60
tgtntccacn acaaatcatn ttacntnagt aagaggccan ctacattgta caacatacac 120
tgagtatatt ttgaaaagga caagttttaa gtanaacncat atgcgcganc atancacatt 180
tatacatggc ttgattgata ttttagcacag canaaactga gtgagttacc agaaanaaat 240
natatatgtc aatcngattt aagatacaaa acagatccca tggatcatan catcntgtag 300
gagttgtggc tttatgttta ctgaaagtca atgcagttcc tgtacaaaga gatggccgta 360
agcattctag tactctact ccattggtaa gaatcgtaca cttatgttta catatgtncn 420
gggtaagaac tgtgttaagt naanttatgg agaggtccan gagaaaaatt tgatncaa 478

```

<210> 199

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(482)

<223> n = A,T,C or G

<400> 199

```

agtgaactgt cctccacaaa aaccccttga tcaagtttgt ggcactgaca atcagacctc 60
tgctagttcc tgtcatctat tgcctactaa atgcagactg gagggggacca aaaaggggca 120
tcaactccag ctggattatt ttggagcctg caaatctatt cctacttgta oggactttga 180
agtgattcag tttcctctac ggtgagaga ctggctcaag aatctctca tgcagcttta 240
tgaagccnac tctgaacacg ctggttatct nagctgagaa ncagagaaat aaagtcnaga 300
aaatttacct ggangaagag aggcctttngg ctggggacca tcccattgaa cttctcttta 360
anggaacttta agaanaaact accacatgtt tgtngtatcc tgggtgcngg cpgtttiantg 420
aacntngacn ncaaccttnt ggaatanant cttgaacngn tctgaactt gctcctctgc 480
ga 482

```

<210> 200

<211> 270

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(270)

<223> n = A,T,C or G

```

<400> 200
cgscgcgaag tgaacteca gctggggcgc tgcggacgaa gattctgcca gcagttggtc      60
cgactgcgac gacggcggcg gcgacagtgc caggtgcagc gggggcgccct ggggtcttgc      120
aaggctgagc tgaogcgcga gaggtcgtgt cactgtccac gaccttgacg ccgtcgggga      180
cagccgggac agagcccggt gaangcggga ggcctcgggg agccctcagg gaaggcgggc      240
ccgagagata cgcaggtgca ggtggccgcc
                                                                270

```

```

<210> 201
<211> 419
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (419)
<223> n = A,T,C or G

```

```

<400> 201
tttttttttt ttttgaatc tactgcgagc acagcaggtc agcaacaagt ttattttgca      60
gctagcaagg taacagggtc gggcatgggt acatgttcag gtcaacttcc ttgtcgtgg      120
ttgattggtt tgtctttatg ggggcggggt ggggtagggg aaanogaagc anaantaaca      180
tggagtgggt gcacctccc tgcagaacct ggttacnaaa gcttggggca gtccacctgg      240
tctgtgaccg tcattttctt gacatcaatg ttattagaag tcaggatata ttttagagag      300
tccactgtnt ctggaggagc attagggttt ctgtccaana tccsancaaa atccacntga      360
aaaagttaga tgatncangt acngaatacc ganggcatan ttctcatant oggtggcca      419

```

```

<210> 202
<211> 509
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (509)
<223> n = A,T,C or G

```

```

<400> 202
tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt      60
tggcacttaa tccattttta ttcaaaaatg tctacaaant ttnaatnmc cattatacng      120
gttatttttc aaaatctaaa nttattcaa atnfnagcca aantccttac ncaaatmnaa      180
tctnccnaaa aatcaaaaat atactntctt ttcagcaaac ttngttacat aaattcaaaa      240
aatatatacg gctgggtgtt tcaaaagtca attatcttaa cactgcaaac atnttttnaa      300
ggaactaaaa taaaaaaaaa cactnccgca aaggttaag ggaacaacaa attcntttta      360
caacancnnc nattataaaa atcatatctc aaatcttagg ggaatatata ctccacacng      420
ggatcttaac ttttactnca ctttgtttat tttttcnaaa ccattgtntt gggcccaaca      480
caatggnaat nccnccnccn tggactagt
                                                                509

```

```

<210> 203
<211> 583
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (583)
<223> n = A,T,C or G

```

<400> 203

tttttttttt	tttttttga	cccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgcctttaga	tacataattc	ttagggaatta	gettataaat	tgctaaagt	180
gaaaatcttc	tctagctctt	ttgaactgaa	atttttgact	cttgtaaaac	atcccaattc	240
atttttcttg	tctttaaaat	tatctaactc	ttccattttt	tccttatccc	aagtcaattt	300
gcttctctag	cttcatttcc	tagctcttat	ctactattag	taagtggctt	tttctctaaa	360
agggaaaaaa	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tattttctac	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaag	aaggcttaga	tccttttatg	480
tcctttttag	tcactaaacg	atatcnaaag	tgccagaatg	caaaaggctt	gtgaacattt	540
attcaaaagc	taataaaga	tatttcacat	actcatcttt	ctg		583

<210> 204

<211> 589

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (589)

<223> n = A,T,C or G

<400> 204

tttttttttt	tttttttct	tttttttttt	ttganaatga	ggatcgagtt		60
tttcaactct	tagatagggc	atgaagaaaa	ctcatcttct	cagctttaaa	ataaacatca	120
aatctcttat	gctatatcat	attttaagtt	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaat	ctgttccttc	ttctcattca	tctagttata	tcaagtacta	ccttgcatat	240
tgagagggtt	ttcttctcta	tttacacata	tatttccatg	tgaatttgta	tcaaaccttt	300
attttcatgc	aaactagaaa	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
cattcacaaa	ctgctcaaat	tgtttggtta	gnttatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacatttac	ngacnagcaa	taataaaaat	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattact	centagccca	acacaatgg		589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (545)

<223> n = A,T,C or G

<400> 205

tttttttttt	ttttttcagt	aataatcaga	acaatattta	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaagttt	gtctctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttcgagg	aaatacacca	aaatacatta	agtaaatat	180
ttaagatcat	agagcttgta	agtgaaaaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	caaattacta	tggacttctt	gctttaattt	tgtgatgaat	300
atgggggtgc	actggtaaac	caacacattc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	getanatnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aagggggcga	ngaaatgagg	aagaaaagaa	aaggattacg	catartgkta	ttctctatngg	480
aaggattaga	tatgttttct	ttgccaatat	taaaaaaata	ataatgttta	ctactagtga	540
aaccg						545

<210> 206

<211> 487

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(487)

<223> n = A,T,C or G

<400> 206

tttttttttt	tttttttagtc	aagtttctna	tttttattat	aattaaagtc	ttggtcattt	60
catttatttag	ctctgcaact	tacatattta	aattaaagaa	acgttnttag	acaactgtna	120
caatttataa	atgtaagggtg	ccattattga	gtanatatat	tcctccaaga	gtggatgtgt	180
cccttctccc	accaactaat	gaancagcaa	cattagtta	attttattag	tagatnatac	240
actgctgcaa	acgctaattc	tcttctccat	ccccatgtng	atattgtgt	tatgtgtgag	300
ttggttagaa	tgcatcanca	atctnacsat	caacagcaag	atgaagctag	gcntgggctt	360
tcggtgaaab	tagactgtgt	ctgtctgaat	caaatgatct	gacctatcct	cggtggcaag	420
aactcttoga	accgcttctt	caaaggcngc	tgccacattt	gtggcntctn	ttgcacttgt	480
ttcaaaa						487

<210> 207

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(332)

<223> n = A,T,C or G

<400> 207

tgaattgggt	aaaagactgc	atttttanaa	ctagcaactc	ttatttcttt	cccttaaaaa	60
tacatagcat	taaatcccaa	atcctattta	aagacctgac	agcttgagaa	ggctactact	120
gcattctatg	gaccttctgg	tggttctgct	gttactnttg	aantctgaca	atccttgana	180
atctttgcac	gcagaggagg	taaaagggtat	tggtatttca	cagagggaana	acacagcgca	240
gaaatgaagg	ggccaggctt	actgagcttg	tccactggag	ggctcatggg	tgggacatgg	300
aaaagaaggc	agcctaggcc	ctggggagcc	ca			332

<210> 208

<211> 524

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(524)

<223> n = A,T,C or G

<400> 208

agggcggtgt	gaggagggtg	ttactgtttt	gtctcagtaa	caataaatac	aaaaagactg	60
gttgtgttcc	ggccccatcc	aaccaogaag	ttgatttctc	ttgtgtgcag	agtgactgat	120
tttaaggagc	atggagcttg	tcacaatgtc	acantgtcac	agtgtgaagg	gcacactcac	180
tcocgcgtga	ttcacattta	gcaaccaaca	atagctcatg	agtcacatac	tgtaataact	240
tttggcagaa	tacttnttga	aacttgacga	tgataactaa	gatccaagat	atttcccaaa	300
gtaaatagaa	gtgggtcata	atattaacta	ctgtttcaca	tcagcttcra	tttacaagtc	360
atgagcccgag	acactgacac	caaaactaagc	ccacttagac	tcctcaccac	cagctgtgtc	420
tgcatcaga	caggaggctg	tcaccttgac	caaatctoca	ccagtcacac	atctatccaa	480
aaaccattac	ctgacccact	tcgggtaactg	ccccaccttg	gtga		524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209
 gggtagagaa atccagagtt gccatggaga aaattccagt gtcagcattc ttgtctcttg 60
 tggccctctc ctacactctg gccagagata ccacagtcaa acctggagcc aaaaaggaca 120
 caaaggactc togaccctaa ctgcccaga cctctctca 159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (256)
 <223> n = A,T,C or G

<400> 210
 actccctggc agacaaaggc agaggagaga gctctgttag ttctgtgttg ttgaactgcc 60
 actgaatttc ttccacttg gactattaca tggcatttga gggactaatg gaaaaacgta 120
 tggggagatt ttanccaatt tangtntgta aatggggaga ctggggcagg cgggagagat 180
 ttgcagggtg naaatgggan ggctgggttg ttanatgaac agggacatag gaggtaggca 240
 ccaggatgct aaatca 256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (264)
 <223> n = A,T,C or G

<400> 211
 acattgtttt tttagataa agcattgaga gagctctcct taaogtgaca caatggaagg 60
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgtgtg 120
 atattcaagg acatattgta tatattattc agttccatgt ttatagccta gtttaaggaga 180
 ggggagatac attcngaaag aggactgaaa gaaataactca agtnggaaaa cagaaaaaga 240
 aaaaaaggag caaatgagaa gcct 264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (328)
 <223> n = A,T,C or G

<400> 212
 acccaaaaat ccaatgctga atatttgggt tcattattcc canattcttt gattgtcaaa 60
 ggatttaatg ttgtctcagc ttgggactt cagttaggac ctaaggatgc cagccggcag 120
 gtttatatal gcagcaacaa tattcaagcg cgacaacagg ttattgaact tgcgccgccg 180

```

ttnaatttca ttcccatgtg ctggggatcc ttatcatcag ccagagagat tgaaaattta      240
ccctacnac tctttactct ctgganaggg ccagtgggtg tagctataag ctggccaca      300
tttttttttc cttttacct ttgtcaga      328

```

<210> 213

<211> 250

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (250)

<223> n = A,T,C or G

<400> 213

```

acttatgagc agagcgacat atccnagtgt agactgaata aaactgaatt ctctccagtt      60
taaagcattg ctcaactgaag ggatagaagt gactgccagg agggaaagta agccaaggct      120
cattatgcca aagganatat acatttcaat totccaaact tcttctcat tccaagagtt      180
ttcaatattt gcatgaacct gctgataanc catgttaana aacaaatato tctctnacct      240
tctcatcggt      250

```

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (444)

<223> n = A,T,C or G

<400> 214

```

adccagaatc caatgctgaa tatttggctt cattattccc agattctttg attgtcaaag      60
gatttaattg tgtctcagct tgggcacttc agttaggacc taaggatgcc agccggcagg      120
tttatatatg cagcaacaat attcaagcgc gacaacaggt tattgaactt gcccgccagt      180
tgaatttcat tcccatlgac ttgggatcc tcatcagc canagagatt gaaaatttac      240
ccctacgact ctttactctc tggagagggc cagtgggtgt agctataagc ttggccacat      300
ttttttttcc tttattctct tgtcagagat gcgattcacc catatgctan aaacraacag      360
agtgaatttt acaaaattcc tataganatt gtgaataaaa ctttacctat agttgccatt      420
actttgctct cctaatata cctc      444

```

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (366)

<223> n = A,T,C or G

<400> 215

```

acttatgagc agagcgacat atccaagtgt anactgaata aaactgaatt ctctccagtt      60
taaagcattg ctcaactgaag ggatagaagt gactgccagg agggaaagta agccaaggct      120
cattatgcca aagganatat acatttcaat tctccaaact tcttctcat tccaagagtt      180
ttcaatattt gcatgaacct gctgataagc catgttgaga aacaaatato tctctgacct      240
tctcatoggt aagcagagggc tgtaggcaac atggaccata gcgaanaaaa aacttagtaa      300
tccaagctgt tttctacact gtaaccaggc ttccaaccaa ggtggaaato tcttatactt      360

```

ggtgac

366

<210> 216
 <211> 260
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccac tgcangaggg agggcogggc caggagaatc tccgcttgtc 60
 caagacaggg gctaaggag ggtctccaca ctgctnntaa gggctnbtnc atttttttat 120
 tsataaaaag tnnaaaaggc ctcttctcaa ctcttttccc ttnggctggg aaatttaaaa 180
 atcaaaaatt tcttnaagtt ntcaagctat catatatact ntatcctgaa aaagcaacat 240
 aattcttctt tccctccttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60
 tcttgccat atttttctat ttttaataagg aaatagcaaa ttggggtggg gggaattgtag 120
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tatgtctcta gactagattt ataattagcc acttacccta 240
 atatcttcca tgccttgtaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(205)
 <223> n = A,T,C or G

<400> 218
 accaaggtag tgcattaccg gaantggatc aangacacca tctgtggcca cccctgagca 60
 cccctatcaa ctcccttttg tagtaaaatt ggaaccttgg aatgacacag gccaaagctc 120
 aggcctcccc agttctactg acctttgtcc ttangtntna ngctccaggt tcttaggaaa 180
 anaaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219

tactgttttg tctcagtaac aataaataca aaaagactgg ttgtgttccg gccccatcca 60
 accaagaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tggg 114

<210> 220
 <211> 93
 <212> DNA
 <213> Homo sapien

<400> 220
 actagccagc acaaaaggca gggtagcctg aattgctttc tgccttttac atttctttta 60
 aaataagcat ttagtgcaca gcccctactg agt 93

<210> 221
 <211> 167
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> [1]...[167]
 <223> n - A,T,C or G

<400> 221
 actangtgca ggtgcgcaca aatatttgct gatattccct toatcttggg tccatgagg 60
 tcttttgccc agcctgtggc tctactgtag taagtttctg ctgatgagga gccagnatgc 120
 ccccractac ctccctgac gctcccana aatcaccaca cctctgt 167

<210> 222
 <211> 351
 <212> DNA
 <213> Homo sapien

<400> 222
 agggcgtggt ggggagggcg gtactgacct cattagtagg aggatgcatt ctggcaccoc 60
 gttcttccc tgtccccaa tctttaaag gccatactgc ataaagtcaa caacagataa 120
 atgtttgctg aattaaagga tggatgaaaa aaattaataa tgaatttttg cataatccaa 180
 tttctcttt tatatttota gaagaagttt ctttgagcct attagatccc ggggaatttt 240
 taggtgagca tgattagaga gcttgtaggt tgcctttaca tatatctggc atatttgagt 300
 ctgtatcaa aacaatagat tggtaaaggt ggtattattg tattgataag t 351

<210> 223
 <211> 383
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> [1]...[383]
 <223> n - A,T,C or G

<400> 223
 aaaacaaaca aacaaaazaaa acaatttttc attcagaaaa attatottag ggaactgatc 60
 tggtaattat ggtcaattta atwrtctkt ggggcatttc ottacattgt ctgacaaga 120
 ttaaaatgtc tgtgccaaa ttttgtattt tatttggaga cttcttatca aaagtaatgc 180
 tgccaaagga agtcta gga attagtagtg ttcctmtrac ttgtttggag tgtgctattc 240
 taasagattt tgatttctg gaatgacaat tatattttta ctttgggtgg ggaanagtt 300
 ataggaccac agtcttcaat totgataact gtaaatatct cttttattgc acttgttttg 360
 accattaagc tatatgttta aaa 383

<210> 224
 <211> 320
 <212> DNA
 <213> Homo sapien

<400> 224
 cccctgaagg cttcttgtta gaaaatagta cagttacaac caataggaa cacaataaga 60
 aaaagtttgt gacattgtag tagggagtgt gtacccctta ctccccatca aaaaaaaat 120
 ggatacatgg ttaaaggata raagggcaat atttatcat atgttctana agagaaggaa 180
 gagaaaatac tactttctcr aatgggaagc ccttaaaggt gctttgatac tgaaggacac 240
 aatgtggcc gtccatcttc ctttaragtt gcatgacttg gacaaggtaa ctgttgagc 300
 tttaractcm gcattgtgac 320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225
 gaggactgca gcccgactc gcagccctgg caggoggcac tggtcatgga aaacgaattg 60
 ttctgtctgg ggtcctggg gcacccgagc tgggtgtgtt cagccgcaaa ctgtttccag 120
 aactctaca ccacggggct gggcctgac agtcttgagg ccgaccaaga gccagggagc 180
 cagatgggtg aggcagcct ctccgtacgg caccragagt acaacagacc cttgtctgct 240
 aacgaacctc tgtcatcaa gttggaagaa tccgtgtccg agtctgacac catccggagc 300
 atcagcattg cttcgcagtg cctaccggg gggaaactctt gctctggttc tggctgggg 360
 ctgtctggga acggcagaat gctaccgtg ctgcagtgcg tgaacgtgtc ggtgggtgtc 420
 gaggaggtct gcagtaagct ctatgaccgg ctgtaccacc ccagcatgtt ctgcccggc 480
 ggagggcaag accagaagga ctctgcaac ggtgactctg gggggccctt gatctgcaac 540
 gggtaacttg agggcctgt gtctttcgga aaagcccggt gtggccaagt tggcgtgcca 600
 ggtgtctaca ccaacctctg caaatctact gagtggatag agaaaacggt ccaggccagt 660
 taactctggg gactgggaac ccatagaatt gaccccaaaa tacatcctgc ggaaggaaat 720
 caggaaatct tgttccagc cctcctccc tcaggccag gagtccagga cccagcccc 780
 tctcctctca aaccaagggt acagatcccc agccctcct cctcagacc caggagtcca 840
 gaccccccag cccctcctcc ctacagacca ggagtcagc cctcctccc tcagacccag 900
 gagtccagac cccccagccc ctctcctctc agacccagg gtcagggccc ccaacccctc 960
 ctccctcaga ctccagaggt caagccccc acccctcctt cccagaccc agaggtccag 1020
 gtccagccc ctctcctctc agacccagcg gtccaatgac acctagactc tccctgtaca 1080
 cagtgcctcc ttgtggcag ttgacccaac ctaccagtt ggttttctat ttttctccc 1140
 ttcccttag atccagaat aaagtctaag aggaagcgca aaaaaaaa aaaaaaaa 1200
 aaaaaaaa aaaa 1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226
 accagtatg tgcagggaga cggaaaccca tgtgacagcc cactccacca gggttcccaa 60
 agaacctggc ccagtcataa tcattcatcc tgacagtggc aataatcag ataaccagt 119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227
 acaattcata gggacgacca atgaggacag ggaatgaacc cggctctccc ccagccctga 60

tttttgctac	atatgggggc	ccttttccatt	ctttgcaaaa	acactggggt	ttctgagAAC	120
acggacggtt	cttagcacaA	tttgtagaaA	ctgtgtaraA	ccgggctttg	caggggagat	180
aatttttctc	ctctggagga	aagggtggtg	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgctcggcct	tctctgaacc	aggatggAAC	ggcagacccc	tgaaaagaa	300
gcttgctccc	ttccaatcag	ccacttctga	gaaccccA	ctaaotctct	actgggaaaag	360
agggctctct	caggagcagt	ccaagagttt	tcaaaagata	cgtgacaaat	accatctaga	420
ggaaaggggtg	ccccctcagc	agagaagccg	agagcttaac	tctggctcgt	tccagagaca	480
acctgctggc	tgtcttggga	tgcgcccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcatgagagg	600
gacaggctct	gccctcaagc	cggctgaggg	cagcaaccac	tctcctcccc	tttctcagc	660
aaagccattc	ccacaatccc	agaccatacc	atgaagcaac	gagacccaaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acaccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

<210> 228

<211> 714

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgatcaagac	ccagaccacc	ccaggctctcc	ttogtgggat	60
gtcatgaagt	ttgacatacc	tttggaaoga	gcctcctcct	tggagatgg	aagacogtgt	120
tcttgggcga	cctggcctct	cctggcctgt	ttcttaagat	gcggagtcac	atttcaatgg	180
taggaaaggt	ggcttcgtaa	aatagaagag	cagtcactgt	ggaaactacca	aatggcgaga	240
tgctoggtgc	acattggggg	gctttgggat	aaaagattta	tgagccaaat	attctctggc	300
accagattct	aggccagttt	gttccactga	agcttttccc	acagcagtc	acctctgcag	360
gctggcragc	gaatggcttg	ccgggtggctc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaaggcta	ggatgcttgt	ctagtgttct	tagctgtcac	gttggctcct	tccagggttg	480
ccagacggtg	ttggccactc	cctcttaaaa	cacaggcgcc	ctcctgggtg	cagtgaacctg	540
ccgtgggtatg	ccttggccca	ttccagcagt	ccagcttatg	catctcaagt	ttggggtttg	600
ttctttctgt	taatgttctt	ctgtgttgtr	agctgtcttc	atttctctgg	ctaagcagca	660
ttgggagatg	tggaccagag	atccactcct	taagaaccag	tggcgaaaga	cactttcttt	720
cttcactctg	aagttagctgg	tggg				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagtctggg	ttttgtctat	aaagtttgat	ccctcctttt	ctcactccaa	tcattgtgac	60
cattacacat	cgaaataaaa	gaaagggtgg	agacttgccc	aacgccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattattg	ttagaaaagt	cacccacagt	ccctgttaat	180
ttgtatgtga	cagccaaactc	tgagaaggtc	ctatttttcc	acctgcagag	gatccagctc	240
cactaggctc	ctccttgccc	tcacactgga	gtctccgcca	gtgtgggtgc	ccactgacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

cagcagaaca	aatacaaata	tgaagagtgc	aaagatctca	taaaatctat	gctgagggaat	60
gagcgacagt	tcaaggagga	gaagcttgca	gagcagctca	agcaagctga	ggagctcagg	120
caatataaag	tcctgggttc	cactcaggaa	cgagagctga	ccagtttaag	ggagaagttg	180
cgggaaggga	gagatgcctc	cctctcattg	aatgagcctc	tccaggccct	cctcactccg	240
gatgaaccgg	acaagtccca	ggggcaggac	ctccaagaaa	cagacctcgg	cgcgcaccac	300
g						301

<210> 231
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 231
 gcaagcaogc tggcaaatct ctgtcaggtc agctccagag aagccattag tcatttttagc 60
 caggaactcc aagtcacat ccttggcaac tggggacttg cgcaggttag ccttgaggat 120
 ggcaacacgg gactttctat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggta ccgccaatga tgaacacatt 240
 tttttttgtg gacatgccat ccatttctgt caggatcttg ttgatgactc ggtcagcagc 300
 c 301

<210> 232
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 232
 agtaggtatt tctgagagag ttoaacacca aaactgggac atagttctcc tccaagtgtt 60
 ggcgacagcg gggttctctg attctgggat ataactttgt gtaaatbaac agccacctat 120
 agaagagtcc atctgctgtg aaggagagac agagaactct gggttccgtc gtccctgtcca 180
 cgtgctgtac caagtgtctg tgcagcctg ttacctgttc tcactgaaaa tctggctaatt 240
 gctcttctgt atcacttctg attctgacaa tcaatcaatc aatggcctag agcactgact 300
 g 301

<210> 233
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 233
 atgactgact tcccagtaag gctctctaa gggtaagtag gaggatccac aggattctag 60
 atgctaaggc cccagagatc gtttgatcaa accctcttat ttccagaggg gaaaatgggg 120
 cctagaagtt acagagcacc tagctgtgac gctggcacc ctaggctcac acagactccc 180
 gagttagctg gactacaggc acacagtcac tgaagcaggg cctgttagca attctatggc 240
 tacaattaa catgagatga gtagagactt tattgagaaa gcaagagaaa atccatcaa 300
 c 301

<210> 234
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 234
 aggtctaca catcgagact catccatgat tgatatgaat ttaaaaatta caagcaaaaga 60
 catttctatc atcatgatgc tttcttttgt ttcttctttt cgttttcttc ttttctttt 120
 tcaatttcag caacatactt ctcaatttct tcaggattta aaatcttgag ggattgatct 180
 cgcctcatga cagcaagttc aatgtttttg ccccttgact gaaccacttc caggagtgc 240
 tctatcccca gcttaattgt cagatcatct gcttcaatgg ctctctcagt atagttcttc 300
 t 301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235

tggtgctgtg catcaggagg gtttgagaaa ttttaatttc ttagcagaag ccagaatttg	60
aattccctca tcttttaggg aatcatttac cagggttggg gaggattcag acagctcagg	120
tgctttcact aatgtctctg aactctctgc cctctttgtt catggatagt ccaataaata	180
atgttatctt tgaactgatg ctcataggag agaataaag aartctgagt gatatcaaca	240
ctagggaattc aaagaaatat tagatttaag ctacactgg tca	283

<210> 236

<211> 301

<212> DNA

<213> Homo sapien

<400> 236

aggtctctca ccaactgact gaagcagggt taaaattggg aagaagtata gtgcagcata	60
aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccagaagagg	120
tgggagcagc atcattaata ccaagcagaa tgcgtaatag ataaatacaa tggatatatag	180
tgggtagacg gcttcctgag ttaggtgtac tctggtatcg taatctggac ttgggttgta	240
aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc	300
a	301

<210> 237

<211> 301

<212> DNA

<213> Homo sapien

<400> 237

cagtggtagt ggtggtggac gtggcgttgg tegtgtgtgc ttttttggg cccgtcacaa	60
actcaatttt tgttcgctcc tttttggcct tttccaatth gtccatctca attttctggg	120
ccttggctaa tgcctcatag taggagtcct cagaccagcc atggggatca aacatatact	180
ttgggtagtt ggtgccaagc tcttcaatgg cacagaatgg atcagcttct cgtaaatcta	240
gggttccgaa attctttctt cctttggata atgtagtcca tatccattcc ctcttttate	300
t	301

<210> 238

<211> 301

<212> DNA

<213> Homo sapien

<400> 238

gggcagggtt tttttttttt ttttttgatg gtgcagacc ttgtcttatt tgtctgactt	60
gttcacagtt cagccccctg ctcaaaaaac caacggggcca gctaaggaga ggaggaggca	120
ccttgagact tccggagtct aggtctctca ggttccccca gcccatcaat cattttctgc	180
acccccctgc tgggaagcag ctccccgggg ggtgggaatg ggtgactaga agggatttca	240
gtgtgggacc caggggtctg tcttcacagt aggaggtgga agggatgact aatttcttta	300
t	301

<210> 239

<211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct aggggaattct ttatttagta atgtcctaac ataaaagttc acataaactgc	60
ttctgtcaaa ccatgatact gagctttgtg accaccaga aataactaag agaaggcaaa	120
cataataact tagagatcaa gaaacattta cacagttcaa ctgtttcaaa atagctcaac	180
attcagccag tgagtagagt gtgaatgccr gcatacacag tatacaggtc cttcaggga	239

<210> 240

<211> 300
 <212> DNA
 <213> Homo sapien

<400> 240
 ggctcctaag aagcagcage ttccacattt taacgcagggt ttaagggtgat actgtccttt 60
 gggatrtgcc ctccagtggg accttttaag gaagaagtgg gccbaagcta agttccacat 120
 gctgggtgag ccagatgact tctgttccct ggctactttc ttcaatgggg ogaatggggg 180
 ctgccagggt tttaaaatca tgcttcatct tgaagcacac ggtcacttca cctcctcac 240
 gctgtgggtg taatttgatg aaaataccca ctttgttggc ctttctgaag ctataatgtc 300

<210> 241
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 241
 gaggtctggg gctgagggtct ctgggctagg aagaggaggt ctgtggagct ggaagccaga 60
 cctctttgga ggaaactcca gcagctatgt tgggtgtctc gaggggaatgc aacaagggtg 120
 ctctccatg tattggaaaa ctgcaaaactg gactcaactg gaagggaagt ctgtctgccag 180
 tgtgaagaac cagcttgagg tgacagaaac ggaagcaaac aggaacagcc agtcttttct 240
 tctcctcct gtcatacggg ctctctcaag catcttttgt tgcaggggc ctaaaaggga 300
 g 301

<210> 242
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 242
 cogaggctct gggatgcaac caatcaactct gtttcacgtg acttttatca ccatacaatt 60
 tgtggcattt cctcattttc tacattgtag aatcaagagt gtaaatatat gtatatogat 120
 gtcttcaaga atatatcatt ccttttccac tagaacccat tcaaaatata agtcaagaat 180
 cttaatatca acaaatatat caagcaaaact ggaagycaga ataactacca taatttagta 240
 taagtaccca aagttttata aatcaaaago cctaattgata accattttta gaattcaatc 300
 * 301

<210> 243
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 243
 aggttaagtc cagtttgaag ctcaaaagat ctggtatgag cctaggctca tcgacgacat 60
 ggtggcccaa gctatgaaat cagagggagg ctcatctctg gctgtaaaa actatgatgg 120
 tgacgtgcag tcggactctg tggcccaagg gtatggctct ctggcatga tgaccaggt 180
 gctggtttgt ccagatggca agacagtaga agcagaggct gccacggga ctgtaacccg 240
 tcaactaccg atgttcaga aaggacagga gacgtccacc aatcccatg cttccatttt 300
 t 301

<210> 244
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 244
 gctggtttgc aagaatgaaa tgaatgattc tacagctagg acttaacctt gaaatggaaa 60
 gtcattgcaat cccatttga ggaatctgtc gtgcacatgc ctctgtagag agcagcattc 120

ccagggacct tggaaacagt tgacactgta aggtgcttgc tccccaaagac acatcctaaa 180
 aggtgttgta atgggtgaaaa cgtcttcctt ctttattgce ccttcttatt tatgtgaaca 240
 actgtttgtc tttgtgtat cttttttaaa ctgtaaagtt caatttgtga aatgaatata 300

<210> 245

<211> 301

<212> DNA

<213> Homo sapien

<400> 245

gtctgagtat ttaaaatgtt attgaaatta tccccaaacca atgttagaaa agaaagaggt 60
 tatatactta gataaaaaat gaggtgaatt actatccatt gaaatcatgc tcttagaatt 120
 aaggccagga gatattgtca ttaattgtara cttcaggaca cttagagata gcagccctat 180
 gttttcaaag agcagagatg caattaaata ttgttttagca tcaaaaaggc cactcaatac 240
 agctaatsaa atgaaagacc taattttctaa agcaattctt tataattttac aaagttttaa 300
 g 301

<210> 246

<211> 301

<212> DNA

<213> Homo sapien

<400> 246

ggtctgtcct acaatgcctg cttcttgaaa gaagtcggca cttctctagaa tagctaaata 60
 acctggggtt attttaaaga actatttcta gctcagattg gtcttctctat ggctaaaata 120
 agtgcctctt gtgaaaatta aataaaacag ttaattcaaa gccttgatat atgttaccac 180
 taacaatcat actaaatata ttttgaagta caaagtttga catgctctaa agtgacaacc 240
 caaatgtgtc ttacaaaaca cgttctctac aaggtatgct ttacactacc aatgcagaaa 300
 c 301

<210> 247

<211> 301

<212> DNA

<213> Homo sapien

<400> 247

aggtctcttg gcagggtcta tggatcagag ctcaaaactgg agggaaaggc atttcgggta 60
 gcttaagagg ggcactggcg gcagcacaac caagggaaggc aaggttgttt cccccagct 120
 gtgtcctgtg ttcaggtgcg acacacaatc ctcatgggaa caggatcacc catgcgctgc 180
 ccttgatgat caaggttggg gcttaagtgg attaaggag gcaagttctg ggttctctgc 240
 cttttcaaac catgaagtca ggctctgtat cctcctttt cctaactgat attctaacta 300
 a 301

<210> 248

<211> 301

<212> DNA

<213> Homo sapien

<400> 248

aggtccttgg agatgccatt tcagccgaag gactcttctw ttcggaagta ccccttact 60
 attaggaaga ttcttagggg taatttttct gaggaaggag aactagccta cttaagaatt 120
 acaggaagaa agtggttttg aagacagcca aagaaataaa agcagattaa attgtatcag 180
 gtacattcca gcctgttggc aactccataa aaacatttca gattttaatc cogaatttag 240
 ctaatgagac tggatttttg ttctttatgt tgtgtgtgcg agagctaaaa actcagttcc 300
 c 301

<210> 249

<211> 301

<212> DNA

<213> Homo sapien

<400> 249

gtccagagga agcaccctggc gctgaactag gcttgccctg ctgtgaactt gcaactggag	60
ccctgacgct gctgttctcc ccgaaaaacc cgaacgacct ccgcgatctc cgtcccgccc	120
ccagggagac acagcagtga ctccagagctg gtccgcacct gtgcctccct cctaacggcc	180
cctcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggaaggaaag	240
actgaatcct tgactcagaa ttgtttgctg aaaagaatga tgcgacttcc ttagtcattt	300
a	301

<210> 250

<211> 301

<212> DNA

<213> Homo sapien

<400> 250

ggctctgtgac aaggacttgc aggtctgtggg aggcgaagtga cccttaacac tacactttctc	60
cttatchtta ttggcttgat aaacataatt atttctaaca ctgcttatt tccagttgac	120
cataagcaca tcagtacttt tctctggctg gaatagtaaa ctaagatag gtacatctac	180
ctaaaagact actatgttga ataatacata ctaatgaagt attacatgat ttaaagacta	240
caataaaacc aaacatgctt ataacattaa gaaaacaat aaagatacat gattgaacc	300
a	301

<210> 251

<211> 301

<212> DNA

<213> Homo sapien

<400> 251

gcccaggtcc tacattttggc ccagtttccc cctgcacccct ctccaggggc cctgcctcat	60
agacaacctc atagagcata ggagaactgg ttgcccctggg ggcaggggga ctgtctggat	120
ggcagggggt ctcaaaaatg ccactgtcac tggcaggaaa tgcctctgag cagtacacct	180
cattgggata aatgaaaagg ttcaagaaat cttcaggctc actctcttga aggcceggaa	240
cctctggagg ggggcagtgg aatcccagct ccaggacgga tctctctgaa aagatatact	300
c	301

<210> 252

<211> 301

<212> DNA

<213> Homo sapien

<400> 252

gcaaccaatc actctgtttc acgtgacttt tatcaccata caatttctgg catttctca	60
ttttctacat tgtagaatca agagtgtaaa taatgtata tcatgtctt caagaatata	120
tcattccctt ttcactagga acccattcaa aatataagtc aagaatctta atatcaacaa	180
atatatcaag caaactggaa ggcagaataa ctaccataat ttagtataag tacccaaagt	240
tttataaatc aaaaagccca atgataacca tttttagaat tcaatcatca ctgtagaatc	300
a	301

<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

ttccctaaga agatgttatt ttgttgggtt ttgttccccc tccctctaga ttctcttacc	60
caactaaaaa aaaaaataa agaaaaaatg tgcctgcttc tgaataataa ctcccttagct	120


```

tggcttgatt gttttcagac cttaaaaat aaacttggtt cacaagcttt aatccatgtg 180
gatttttttt cttagagaac cacaaaacat aaaaggagca agtgggactg aatacctgtt 240
tccatagtgc ccacagggtt ttccctcacat ttctccata ggaaatgct ttttcccaag 300
g 301

```

```

<210> 254
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 254
cgtgagcct ttcccttggg ggaggggcaa ggcagaggg ggtccaagt cagcaogagg 60
aacttgacca attcccttga agcgggtggg ttaaaccttg taaatgggaa caaaatcccc 120
ccaaatctct tcaatctacc ctgggtggact cctgactgta gaatttttg gttgaacacaa 180
gaaaaaaata aagcttttga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc 240
acttaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgc 300
t 301

```

```

<210> 255
<211> 302
<212> DNA
<213> Homo sapien

```

```

<400> 255
agcttttttt tttttttttt tttttttttt ttcattaaaa aatagtgcct tttattataa 60
attactgaaa tggtttcttt ctgaatatat atataaatat gtgcaaggtt tgacttggat 120
tgggattttg ttgagttctt caagcatctc ctaataacct caagggcctg agtagggggg 180
aggaanaagg actggaggtg gaatttttat aaaaaacaa agtgattgag gcagattgta 240
aacattatta aaaaacanga aacaaacaaa aaatatgaga aaaaaaccac cccaacacac 300
aa 302

```

```

<210> 256
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (301)
<223> n - A,T,C or G

```

```

<400> 256
gttccagaaa acattgaagg tggcttccca aagtctaact agggatacc cctctagcct 60
aggacctctc tcccacacc tcaatccacc aaaccatcca taatgcacc agataggccc 120
acccccaaaa gcttgagac ottgagcaca cagttatgac caggacagac tcatctctat 180
aggcaaatag ctgctggcaa actggcatta cctgggttgt ggggatggg gggcaagtgt 240
gtggcctctc ggcctgggta gcaagaacat tcagggtagg cctaagttan tegtgttagt 300
t 301

```

```

<210> 257
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 257
gttggtggagg aactctggct tgcctattaa gtccctactg ttttcaactat cccctgaatt 60
tcccacttta tttttgtctt tcaatctgct aggccttaga agaggtctac ctgcctccag 120
tcttacctag tccagtctac cccctggagt tagaatggcc atcctgaagt gaaaagtaat 180

```

gtcacattac tcccttcagt gatcttctgt agaagtgcga atccctgaat gccaccaaga 240
 tottaactct cactatctta atcttatctc ttgactctt ctttaraccy gagaaggcto 300
 C 301

<210> 258
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 258
 cagcagtagt agatgcgta tgccgcacg cccagcactc ccaggatcag caccagcacc 60
 aggggcccag ccaccaggcy cagaagcaag ataaccagta ggctcaagac cagagccacc 120
 cccaggycac caagaatcca ataccaggac tgggcacaaat cttcaaagat cttaacactg 180
 atgtctcggg cattgaggct gtcaataana cgtctatccc ctgtgtatg gtggtgtcat 240
 tggatgaccc tgggagcgcc ggtggagtaa cgttggtcca tgggaagcag cgcacacac 300
 C 301

<210> 259
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 259
 tcatatatgc aaacaaatgc agactangcc tcaggcagag actaaaggac atctcttggg 60
 gtgtcttga gtgatttggc cccctgaggg cagacaccta agtaggaatc ccagtgggaa 120
 gcaaagccat aaggaagccc aggatctctt gtgatcagga agtgggccag gaaggctctg 180
 tccagctcac atctcatctg catgcagcac ggaccggatg cgcacactgg gtcttggctt 240
 cccctccatc ttctcaagca gtgtccttgt tgagccattt gcactcttgg ctccagggtg 300
 C 301

<210> 260
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 260
 ttttttttct cctaaggaa aaagaaggaa caagtctcat aaaaacaaat aagcaatggt 60
 aagggtgtctt aacttgasaa agattaggag tcactggctt acaagttata attgaatgaa 120
 agaactgtac cagccacagt tggccatttc atgccaatgg cagcaaacaa caggattaac 180
 tagggcaaaa taaataagtg tgtggaagcc ctgataagtg ctttaataaac agactgatc 240
 actgagacat cagtacctgc ccgggcggcc gctcgagcag aattctgcag atatccatca 300
 C 301

<210> 261
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 261

```

aactattcga gcaaatcctg taactaatgt gtctccataa agggcttctg actcagtga 60
tctgtctcca tccacgatto tagcaatgac ctctcggaca tcaagctcc tcttaagggt 120
agcaccact attccataga attcatcagc aggaataaa ggctcttcag aagggttcaat 180
ggtagacatc aatttctctt gataatttag attcctcaca accttcctag ttaagtgaag 240
ggcatgatga tcatccaaag ccagctgggc acttactcca gacttctctg aatgaagatc 300
a

```

301

<210> 262

<211> 301

<212> DNA

<213> Homo sapien

<400> 262

```

gaggagagcc tgttacagca ttgttaagca cagaatactc caggagtatt tgtaattgtc 60
tgtgagcttc ttgcgcagag tctctcagaa atttcaaaag atgcaatcc ctgagtcacc 120
cctagacttc ctcaaccaga tctctggggg ctggaacctg gcactctgca ttgttaatga 180
gggctttctg gtgcacacat aattttgtgc atctttgccc taaatcctgg attagtccc 240
catcattacc ccacattat aatgggatag attcagagca gatactctcc agcaaaagat 300
c

```

301

<210> 263

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 263

```

tttagcttgt ggttaaatgac tcacaaaact gattttaaaa tcaagttaat gtgaattttg 60
aaaattacta cttaatccta attcacaata acaatggcat taagggttga cttgagttgg 120
ttcttagtat tattkatggt aaataggctc ttaccacttg caaataactg gccacatcat 180
taatgactga ctccacagta aggtctctta aggggttaagt angaggatcc acaggatttg 240
agatgctaag gcccagaga tcgtttgatc caacctctt attttcagag gggaaaatgg 300
g

```

301

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

```

aaagacgtta aaccactcta ctaccacttg tggaaactctc aaagggttaa tgacaaacc 60
aatgaatgac tctaaaaca atatttacat tteatgggtt gtgacacata aaaaacaag 120
gtggatagat ctagaattgt aacattttaa gaaaaccata scatttgaca gatgagaag 180
ctcaattata gatgcaaagt tataactaaa ctactatagt agtaaaagaa tacatttcac 240
accttcata caaattcact atcttggtt gaggcactcc ataaaatgta tcacgtgcat 300
a

```

301

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgcccaagtt atgtgtagt gtatcggcac ccagaggtaa aactacactg tcatctttgt	60
cttcttgtga cgcagtattt cttctctggg gagaagcggg gaagtcttct cctggctcta	120
catattcttg gaagtctcta atcaactttt gttccatttg ttccatttct tcaggaggga	180
ttttcagttt gtcaacatgt tctctaaca cacttgccca ttctctgtaa gaatccaaag	240
cagtccaagg ctttgacatg tcaacaacca gcataactag agtatcttcc agagatacgg	300
c	301

<210> 266

<211> 301

<212> DNA

<213> Homo sapien

<400> 266

taccgtctgc ccttctctcc atccaggcca ttctgcgaatc tacatgggtc ctctctattcg	60
acaccagatc actctttctt ctaccacacg gcttgctatg agcaagagac acaacctctt	120
ctcttctgtg ttccagcttc ttttctgttt ctcccccacc ctttaagttct attcctgggg	180
atagagacac caatacccat aacctctctc ctaagcctcc ttataaccca gggctgcacag	240
cacagactcc tgacaactgg taaggccaat gaactgggag ctccacagctg gctgtgcttg	300
a	301

<210> 267

<211> 301

<212> DNA

<213> Homo sapien

<400> 267

aaagagcaca ggccagctca gcttgccctg gccatctaga ctacgcctgg ctccatgggg	60
gttctcagtg ctgagtcocat ccaggaaaag ctcaacctaga ccttctgagg ctgaatcttc	120
atcttcacag gcagcttctg agagcctgat attcctagcc ttgatgggtc ggagtaaaag	180
ctcattctga tctctctctt tcttttcttt caagttggct tctctcacat cctctctgtc	240
aattcgcttc agcttctctg ctttagccct catttcacga agcttcttct ctttggcctc	300
t	301

<210> 268

<211> 301

<212> DNA

<213> Homo sapien

<400> 268

aatgtctcac tcaactactt cccagcctac cgtggcctaa ttctgggagt tttctcttta	60
gactctggga gagctgggtc ttctaaggag aaggagggaag garagatgta actttggatc	120
tcgaagagga agtctaattg aagtaattag tcaacggctc ttgttttagac tcttgggaata	180
tgctgggtgg ctcagtgagc ctttttggag aaagcaagta ttattcttaa ggagtaacca	240
cttcccattg ttctacttcc taccatcctc aattgtatat tatgtattct ttggagaact	300
a	301

<210> 269

<211> 301

<212> DNA

<213> Homo sapien

<400> 269

taacaatata cactagctat ctttttaact gtccatcatt agcarcaatg aagattcaat	60
aaaattacct ttattcacac atctcaaaac aattctgcaa attcttagtg aagtttaact	120
atagtccagc acctaaata ttcaacttct tttctatgto tactgaaaat aagttcaacta	180
cttttctgga tattctttac aaaaattctt taaaattctt ggtattctca cccccaatta	240
tacagttagc caaccacctt atgtagtctt tacatgatag ctctgtagaa gtttcacatc	300
t	301

<210> 270
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 270
 cattgaagag cttttgcgaa acatcagaac acaagtgtt ataaaattaa ttaagcctta 60
 cacaagaata catattcctt ttatttctaa ggagtttaac atagatgtag ctgatgtgga 120
 gagcttgctg gtgcagtgc ttttgataa cactattcat ggccgaattg atcaagtcac 180
 ccaactcctt gaactggatc atcagaagaa ggggtggtgca cgatatactg cactagataa 240
 tggaccaacc aactaaattc tctcaccagg ctgtatcagt aaactgggtt aacagaaaac 300
 a 301

<210> 271
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 271
 aaaagggttc cataagatta acaattttaa taaatatttg atagaacatt ctttctcatt 60
 tttatagctc atcttttagg ttgatattca gticagtctt ccttgctgt tcttgatcca 120
 gaattgcaat cacttcatca gctgtattc gctccaattc totataaagt ggggtccaagg 180
 tgaaccacag agccacagca cactctttc ccttggtgac tgccttcacc ccatgagggt 240
 tctctcctcc agatgansac tgatcatgcy cccacatttt gggttttata gaagcagtc 300
 c 301

<210> 272
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 272
 taaattgcta agccacagat aacaccaatc aatgggaca aatcactgtc ttcaaagtgc 60
 ttatcagaaa accaatgag cctggaatct tcataatacc taancatgcc gtatttagga 120
 tcraataatt cctcatgat gagcaagaaa aattctttgc gcacccctcc tgcateraca 180
 gcactctctc caacaaatat aaccttgagt ggcttctgt aatctatgtt cttgttttc 240
 ctaaggactt ccattgcac tcttacaata tttctctac gcaccactag aattaagcag 300
 g 301

<210> 273
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 273
 acatgtgtgt atgtgtatct ttgggaaaan aanaagacat cttgttkayt atttttttgg 60
 agagangctg ggacatggat aatcacwtaa tttgctayta tyactttaat ctgactygaa 120

```

gaacogteta aasataaaat ttaccatgtc statattcct tatagtatgc ttatttcacc 180
tctttctgt ccagagagag tatcagtgac ananatttma gggtagaac atgmattggg 240
gggacttnty tttaacgagm accctgccc ggcgcctcg makcngentt ccgcsananc 300
t 301

```

```

<210> 274
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 274
cttataact ctttctcaga ggcaaaagag gagatgggtg atgtagacaa ttctttgagg 60
aacagtaaat gattattaga gagaangaat ggaccaagga gacagaaatt aacttgtaaa 120
tgattctctt tggaatctga atgagatcaa gaggccagct ttagcttctg gaaaagtcca 180
tctaggtagt gttgcattct cgtcttcttt tctgcagtag ataatgaggt aaccgaaggg 240
aattgtgctt cttttgataa gaagctttct tggctcatc aggaattcc aganaaagtc 300
c 301

```

```

<210> 275
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 275
tcgggtgtcag cagcaogtgg cattgaacat tgcaatgtgg agcccaaac acaganaatg 60
gggtgaaatt ggcgaacttt ctattaaatt atgttgccaa ttttgccacc aacagtaagc 120
tggccttctt aataaagaa aattgaaagg tttctcacta aacggaatta agtagtggag 180
tcaagagact ccagggctc agcgtacctg cccggcggc cgtctgaagc cgaattctgc 240
agatatccat cacactggcg gncgtctgan catgcattca gaaggnccaa ttgcacctat 300
a 301

```

```

<210> 276
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 276
tgtacacata ctcaataaat aaatgactgc attgtgggtat tattactata ctgattatat 60
ttatcatgtg acttctaatt agaaaatgta tccaaaagca aaacagcaga tatacaaaat 120
taaagagaca gasgatagac attaacagat aaggcaactt atacattgag aatccaaatc 180
caatacattt aaacatttgg gaaatgaggg ggacaaatgg aagccagatc aattttgtgt 240
aaaactattc agtatgttct ctttgcctca tgtctgagaa ggctctcctt caatggggat 300
g 301

```

```

<210> 277
<211> 301
<212> DNA
<213> Homo sapien

```

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 277

tttgttgatg	tcagtatttt	attacttgcg	ttatgagtg	tcacctggga	aattctaaag	60
atacagagg	attggaggaa	gcagagcaac	tgaatttaat	ttaaaagaag	gaaaacattg	120
gaatcatgg	actcctgata	ctttcccaaa	tcaacactct	caatgcccc	cccttgtct	180
caccatagt	gggagactaa	agtggccacg	gatttgctt	angtgtgcag	tgcgttctga	240
gttcnctgt	gattacatct	gaccagtctc	ctttttccga	agtcctctcg	ttcaatcttg	300
c						301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 278

taccactaca	ctccagcctg	ggcaacagag	caagacctgt	ctcaaagcat	aaaatggaat	60
aacatatcaa	atgaacacgg	gaaaatgaag	ctgacaattt	atggaagcca	gggttgttca	120
cagttctctac	tgttattatg	cattacctgg	gaatttatar	aagcccttaa	taataatgcc	180
aatgaacatc	tcattgtgtg	tcacaatgtt	ctggcactat	tataagtgt	tcacaggttt	240
tatgtgttct	tcgttaacttt	atggantagg	tactcggccg	cgaacacgct	aagccgaatt	300
c						301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 279

aaagcaggaa	tgacaaagct	tgcttttctg	gtatgttcta	ggtgtattgt	gacttttact	60
gttatattaa	ttgccaatat	aagtaaatat	agattatata	tgtatagtgt	ttcacaaagc	120
ttagaccttt	accttccagc	caccccacag	tgcttgatat	ttcagagtca	gtcatttggt	180
atcatgtgt	agttccaaag	cacataagct	agaanaanaa	atatttctag	ggagcactac	240
catctgtttt	cacatgaaat	gccacacaca	tagaactcca	acatcaattt	cattgcacag	300
a						301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280

ggtactggag	ttttcctccc	ctgtgaaaac	gtaactactg	ctgggagtga	attgaggatg	60
tagaaaggtg	gtggaacca	atttgtgtca	atggaaatag	gagaatatgg	ttctcactct	120

tgagaaaaaa	acctaaagatt	agcccaggtg	gttgcoctgta	acttcagttt	ttctgcctgg	180
gtttgatata	gttttagggtt	ggggttagat	taagatctaa	attacatcag	gacaaagaga	240
cagactatta	actccacagt	taattaaagga	ggatgttcc	atgtttattt	gttaaagcag	300
t						301

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281						
aggtaacaga	aggggaatgg	gaaagagctg	ctgctgtggc	attgttcaac	ttggatatto	60
gcccagcaat	ccaaatcctg	aatgaagggg	catcttctga	aaaaggagat	ctgaatctca	120
atgtggtagc	aatggcttta	tcgggttata	cggatgagaa	gaactccctt	tggagagaaa	180
tgtgtagcac	actgcgatta	cagctaaata	aoccgatttt	gtgtgtcatg	tttgcatctc	240
tgacaagtga	aacaggatct	taagatggag	ttttgatga	aaacaaagtc	gcagtacctc	300
g						301

<210> 282
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 282						
caggtactac	agaattaaaa	tactgacaag	caagtagttt	cttggcgtgc	argaatggca	60
tccagaacct	aaaaattaag	aaattcaaaa	agacatcttg	tgggcacctg	ctagcacaga	120
agcgcagaag	caaagcccag	gcagaacctat	gctaaccctta	cagctcagcc	tgcacagaag	180
cgcagaagca	aagccraggc	agaacctatg	taacrttaca	gtcagcctg	cacagaagcg	240
cagaagcaaa	gccrccggcag	aacatgctaa	ccttacagct	cagcctgcac	agaagcacag	300
a						301

<210> 283
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 283						
atctgtatac	ggcagacaaa	ctttatarag	tgtagagagg	tgagcgaaag	gatgcaaaag	60
cactttgagg	gctttataat	aatatgetgc	ttgaaaaaaa	aaatgtgtag	ttgatactca	120
gtgcatctcc	agacatagta	aggggttgct	ctgacraatc	aggtgatcat	ttttctatc	180
acttcccagg	ttttatgcaa	aaattttgtt	aaattctata	atggtgatat	gcactcttta	240
ggaaacatat	acatttttaa	aaatctatct	tahtaaagaa	ctgacagacg	aatttgettt	300
g						301

<210> 284
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 284						
caggtacaaa	acgctattaa	gtggcctaga	atttgaacat	ttgtggtctt	tatttaattt	60
gcttcgtgtg	tgggcaaaag	aacatcttcc	ctaaatatat	attaccaaga	aaagcaagaa	120
gcagattagg	tttttgacaa	aacaaacagg	ccaaaagggg	gctgacctgg	agcagagcat	180
gggtgagagg	aaggcatgag	agggcaagtt	tgttgtggac	agatctgtgc	ctactttatt	240
actggagtaa	aagaaaacaa	agttcattga	tgtcgaagga	tatatcagct	gttagaaatt	300
a						301

<210> 285

<211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 285
 acatcaccat gatcggatcc cccaccacatt atacgttgta tgtttacata aatactcttc 60
 aatgatcatt agtgttttaa aaaaaatact gaasactcct tctgcacccc aatctctaac 120
 caggaaagca aatgctatct acagacctgc aagccctccc tcaaacnaaa ctatttctgg 180
 attaaatag tctgacttct tttgaggtca cactactagg caaatgctat ttacgatctg 240
 caaaagctgt ttgaagagtc aaagccccc tctgaaacag atttctggac cctgtaacag 300
 t 301

<210> 286
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 286
 taccactgca ttccagcctg ggtgacagag tgagactccg tctccaaaa aaactttgct 60
 tgtatattat ttttgcccta cagtggatca ttctagtagg aaaggacagt aagatttttt 120
 atcaaaatgt gtcacgccag taagagatgt tatattcttt tctcatttct tccccaccca 180
 aaataagct accatatagc ttataagctt caaatTTTT ccttttacta aaatgtgatt 240
 gtttctgttc attgtgtatg cttcatcacc tatattaggg aaattccact ttttcccttg 300
 t 301

<210> 287
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 287
 tacagatctg ggaactaaat attaaaaatg agtctggtcg gatatacaga gaatgttggg 60
 cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaaatag 120
 aaatgatttg gttatgaacg cacagttagg gcagcagggc cagaatcctg accctctgcc 180
 ccgtggttat ctccctccca gcttggtgc ctcatgttat cacagtatc cattttgttt 240
 gttgcatgct ttgtgaagcc atcaagattt tctctctgt tttcctctca ttggtaatgc 300
 t 301

<210> 288
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 288
 gtacacctaa ctgcaaggac agctgaggaa tgtaatgggc agccgctttt aaagaagtag 60
 agtcaatagg aagacaaatt ccagttccag ctacgtctgg gtatctgcaa agctgcacaa 120
 gatcttttaa gacatttca agagaatatt tcttaaaagt tggcaatttg gagatcatac 180
 aaagcatct gcttttgtga tttaattag ctcatctggc cactggaaga atccaaacag 240
 tctgccttaa ttttgatga atgcatgatg gaaattcaat aatttagaaa gtcaaaaaaa 300
 a 301

<210> 289
 <211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 289

```

ggcacactgt ttccatgtta tgtttctaca cattgetacc tcagtgtctcc tggaaactta      60
gcttttgatg tctccaagta gtccaccttc atttaactct ttgaaactgt atcatctttg      120
ccaagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa      180
cgttctataa atgaatgtgc tgaagcaaaag tgcccatggc gccggcgaan aagagaaaga      240
tgtgttttgc ttggactct ctgtggtccc ttccaatgct gtgggtttcc aaccagnnga      300
a                                          301

```

<210> 290

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 290

```

acactgagct cttcttgata aatatacaga atgcttggca tatacaagat tctatacbac      60
tgactgatct gttcatttct ctcacagctc ttaaccccaa aagcttttcc accctaagtg      120
ttctgacctc cttttctaatt cacagtaggg atagaggcag anccacctac aatgaacatg      180
gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctacagtgcc      240
tgccctgaac aaaaacattt ctccatgtct cttttctctc atgcttcaag taacagtga      300
a                                          301

```

<210> 291

<211> 301

<212> DNA

<213> Homo sapien

<400> 291

```

caggtaacca tttcttctat cctagaaaca tticatttta tgttgktgaa acataaacaac      60
tatatcagct agattttttt totatgcttt acctgctatg gaaaatttga cacattotgc      120
tttactcttt tgtttatagg tgaatcacia aatgtatttt tatgtattct gtagttcaat      180
agccatggct gtttacttca tttaatttat tttagcataa gacattatga aaaggccctaa      240
acatgagctt cacttcccca ctaactaatt agcatctgtt atttcttaac cgtaatgctt      300
a                                          301

```

<210> 292

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 292

```

acctttttagt agtaatgtct aataataant aagaaatcaa ttttataagg tccatatagc 60
tgtattaaat aatttttaag tttaaaagat aaaataccat catttttaa gttggtattc 120
aaaaccaaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg 180
ggaaatatag taatttyatga atgttnatta aattccagtt ataatagtgg ctacacactc 240
tcaactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa 300
a 301

```

```

<210> 293
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 293
ggtagcaagt gctggtgcca gctgttacc tgttctcact gaaaagtctg gctaattgctc 60
ttgtgtagtc acttctgatt ctgacaatca atcaatcaat ggcctagagc actgactgtt 120
aacacaaacg tcaactagca agtagcaaca gctttaagtc taaatacaaa gctgttctgt 180
gtgagaattt tttaaaaggc tacttgtata ataacccttg tcaattttta tgtaacctgg 240
ccgcgaccac gctaagccga attctgraga tatccatcac actggcggcc gctcgagcat 300
g 301

```

```

<210> 294
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> [1]... (301)
<223> n = A,T,C or G

```

```

<400> 294
tgaccataaa caatatacac tagctatctt tttactgtc catcattagc accaatgaag 60
attcaataaa attaccttta ttcacacatc tcaaaacaa tctgcaaat cttagtgaag 120
tttaactata gtcacaganc ttaaatattc acattgtrtt ctatgtctac tgaaaataag 180
ttcactactt ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc 240
cccaattata cagtagcaca accaccttat gtggtttta catgataagc ctgtagaggt 300
t 301

```

```

<210> 295
<211> 305
<212> DNA
<213> Homo sapien

```

```

<400> 295
gtactctttc tctccctccc tctgaattta attctttcaa ctgcaattt gcaaggatta 60
cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac 120
ttggtttgtg aatccatctt gctttttccc cattggaact agtcattaac ccactctcga 180
actggtagaa aaacrtctga agagctagtc tctcagcctc tgacaggtga attggtggt 240
tctcagaacc atttcaccca gacagcctgt tctatctctg tttataaat tagtttgggt 300
tctct 305

```

```

<210> 296
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 296
aggtactatg ggagctgct aaaaataat ttagatagtaa aagtatgtaa tgtgctatct 60

```

```

cacctagtag taaactaaaa ataaactgaa accttatgga atctgaagtt attttccttg 120
attaaataga attaataaac caatatgagg aaacatgaaa ccattgcaatc tactatcaac 180
tttgaaaaag tgattgaacg aaccacttag ctctcagatg atgaacctg ataagtcatt 240
tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg 300
c

```

```

<210> 297
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (300)
<223> n = A,T,C or G

```

```

<400> 297
actgagtttt aactggacgc caagcaggca aggetggaag gttttgctct ctttgtgcta 60
aaggttttga aaaccttgaa ggagaatcat ttgacaaga agtacttaag agtctagaga 120
acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180
tccatcaattg ggagtgcaat ggcacacctt caaaatttgt ctgggtggc ctgagtggtc 240
acgcacctc ggctgcgacc acgctaagcc gaattctgca gatattcacc acactggcgg 300

```

```

<210> 298
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (301)
<223> n = A,T,C or G

```

```

<400> 298
tatggggttt gtcacccaaa agctgatgct gagaaaggcc tccctggggc cctcccgctg 60
ggcatctgag agacctgggtg ttccagtggt tctggaaatg ggtcccagtg ccgcccggctg 120
tgaagctctc agatcaatca cgggaagggc ctggcggtgg tggccacctg gaaccacctt 180
gtcctgtctg ttacatttcc actaycaggt tttctctggg cattacnatt tgttccccta 240
caacagtgac ctgtgcattc tgcgtggtgc tgcgtgtctc gcaggtgggt ctcagcgagg 300
t
301

```

```

<210> 299
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 299
gttttgagac ggagtttcaac tcttggtgac cagactggac tgcattggca gggctctctg 60
tcaatgcacc ctctgcctcc cagggttagag caattctcct gctcagcct ccaggttagc 120
tgggattgca ggctcagcc accataccca gctaattttt ttgtattttt agtagagagc 180
gagtttggcc atgttgcca gctgggtcca aactcctgac ctcaagcgac ctgcctgcct 240
cggcctccca aagtgtgga attataggca tgagtcacca cgcccagcct aaagatattt 300
t
301

```

```

<210> 300
<211> 301
<212> DNA
<213> Homo sapien

```

<400> 300

atccagtttt atttgetgcc ccagtatctg taaccaggag tgccacaaa tcttgccaga 60
 tatgtccac acccactggg aaagggtccc aactggctac ttctctatc agctgggtca 120
 gctgcattcc acaagggtct cagcctaag agtttcaact cctgccagtc tcaaaactta 180
 gtaaagcaag accatgacat tccccacgg aaatcagagt ttgccccacc gtcttgttac 240
 tataaagcct ggcctaca gtccttgett ctccacacca atccccagcg catccccat 300
 g 301

<210> 301

<211> 301

<212> DNA

<213> Homo sapien

<400> 301

ttaaattttt gagaggataa aaaggacaaa taactctagaa atgtgtcttc ttcagttctg 60
 agaggacccc aggtctccaa gcaaccacat ggtcagggtc atgaataatt aaaagtttgt 120
 gggaaactac aaagacccct agagctgaga caccacacac agtgggagct caccagacc 180
 ctccagagctg agacacccac aacagtggga gctcacaag accctcagag ctgagacacc 240
 cacaacagca cctcgttcag ctgccacatg tgtgaataag gatgcaatgt ccagaagtgt 300
 c 301

<210> 302

<211> 301

<212> DNA

<213> Homo sapien

<400> 302

aggtacacat ttagcttctg gtaaatgact cacaacactg attctaaaat caagttaatg 60
 tgaattttga aaattactac ttaattctaa ttccacataa caatggcatt aaggtttgac 120
 ttgagtttgt tcttagtatt atttatggtt aataggctct taccacttgc aaataactgg 180
 ccacatcatt aatgactgac tcccagtaa ggtctcttaa ggggtaagta ggaggatcca 240
 caggatttga gatgctaagg cccagagat cgtttgatcc aacctctta ttttcagagg 300
 g 301

<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

aggtaccaac tgtggaaata ggtagaggat catlcttctt ttccatata actaagttgt 60
 atattgtttt ttgacagttt aacacatctt ctctctcag agattcttc acaatagrac 120
 tggctaattg aactacogct tgcattgtaa aaatgggtgt ttgtgaaatg atcataggcc 180
 agtaacgggt atgtttttct aactgatctt ttgtctgttc caaagggacc tcaagacttc 240
 catcgatttt atatctgggg tctagaaaag ggttaactt gtttccctc ataatteac 300
 c 301

<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

acatggatgt tattttgcag actgtcaacc tgaatttcta ttgtctgac attgctaat 60
 tattagtctt agtttcagct taccacttt ttgtctgaa catgcaraa agacagtgc 120
 ctttttagtg tatcatatca ggaatcatct cacattggtt tgtgccatta ctggtgcagt 180
 gactttcagc caattgggta aggtggagtt ggcctatgt ctccactgca aaattactga 240

ttttcccttt gtaatttaata agtgtgtgtg tgaagattct ttgagatgag gtatatacct 300
c 301

<210> 305
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

<400> 305
gangtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcacc ctgggatgag 60
cagggggaca gaactggaca gacacgttgt catttgcctc tctgggtagg aaatggggcg 120
taaaggagga gaacacagata caaatctcc aactcagtat taaggatttc tcatgcctag 180
aatattggta gaaacaagaa tacattcata tggcaaataa ctaaccatgg tggacaacaaa 240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag 300
a 301

<210> 306
<211> 8
<212> PRT
<213> Homo sapien

<400> 306
Val Leu Gly Trp Val Ala Glu Leu
1 5

<210> 307
<211> 637
<212> DNA
<213> Homo sapien

<400> 307
acaggggratg aagggaaagg gagaggatga ggaagccccc ctggggattt ggtttggtcc 60
ttgtgatcag gtggtctatg gggcttlatcc ctacaaagaa gaatccagaa ataggggcac 120
attgaggaat gatcacttgag cccaaagagc attcaatcat tgttttattt gccttmtttt 180
cacaccattg gtgagggagg gattaccacc ctggggttat gaagatgggt gaacacccca 240
cacatagcac cggagatctg agatcaacag tttcttagcc atagagattc acagcccaga 300
gcaggaggac gcttgcacac catgcaggat gacatggggg atgcgctcgg gattggtgtg 360
agaagcaag gactgttaga ggcaggcttt atagtaacaa gacggtgggg caaactctga 420
tttccgtggg ggaatgtcat ggtcttgctt tactaagttt tgagactggc aggtagtga 480
actcattagg ctgagancct tgtggaatgc acttgaccca actgatatag gaagtagcca 540
gggtgggagc tttccagtg ggtgtgggac atatctggca agattttgtg gcactcctgg 600
ttacagatac tggggcagca aataaaactg aatcttg 637

<210> 308
<211> 647
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{647}
<223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacago	tgggagcbac	60
tgtcagggg	aaggttcata	tgggaacttc	tactgcccc	ggttctatac	aggatataaa	120
ggngcctcan	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccacccctct	gaccctttgg	aactcctctg	accctttaga	acaagcctac	ctaakatctg	240
ctagagaaaa	gaccaacaac	ggcctcaaag	gatctcttac	catgaaggtc	tcagctaatt	300
cttgggttaag	atgtgggttc	cacattaggt	cttgaatatg	gggggaaggg	tcaatttgc	360
catthtctgt	gtggataaag	tcaggatgcc	caggggcccag	agcagggggc	tgtttgttt	420
gggacaaatg	gctgagceta	taaccatagg	ttatggggaa	caaaaacaaca	tcaagtccac	480
tgtatcaatt	gccatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	tttttctctt	gcttctgact	tgataaaaag	ggaccgt		647

<210> 309

<211> 460

<212> DNA

<213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaagc	cagaacaaca	tgtgatagat	60
aatatgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaaatac	tcatcatttt	tggccagcag	ttgtttgatc	180
accaaacatc	atgccagaat	actcagcaaa	cctctcttagc	tcttgagaag	tcaaatgcog	240
ggggaattta	ttcctggcaa	ttttaattgg	actccttatg	tgagagcagc	ggctaccag	300
ctgggggtgt	ggagcgaacc	cgctcactagt	ggacatgacg	tggcagagct	cctgggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttgtt	tttgccttct	gggtgtgaag	attcttcaagt			460

<210> 310

<211> 539

<212> DNA

<213> Homo sapien

<400> 310

acgggaactta	tcaataaaag	ataggaaag	aagaaaactc	aaatattata	ggcagaaatg	60
ctaaagggtt	taaaatatgt	caggattgga	agaaggcatg	gataaagaac	aaagttcagt	120
taggaagag	aaacacagaa	ggaagagaca	caataaaagt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagatttctg	ggaaatgggt	tggtttcttg	tatggatgt	attttagcaa	240
taattcttat	ggcagagaaa	gctaaaatcc	tttagcttgc	gtgaatgac	acttgcgtga	300
ttcctcaagg	taggcattgat	gaaggagggt	tttagaggga	cacagacaca	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaacagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaagggaag	aacttatggc	480
atattttcac	ccccacaaaa	gtcagttaaa	tattgggaca	ctaaccatcc	aggtcaaga	539

<210> 311

<211> 526

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...[526]

<223> n = A,T,C or G

<400> 311

caaatcttgag	ccaatgacat	agaattttac	aaatcaagaa	gcttattctg	gggccatttc	60
ttttgaogtt	ttctctaaac	tactaaagag	gcattaatga	tcataaatt	atattatcta	120
catttacago	atttaaaatg	tgttcagcat	gaaatattag	ctacagggga	agctaaataa	180

attaaacatg gaataaagat ttgtccttaa atataatcta caagaagact ttgatatttg	240
tttttcacaa gtgaagcatt cttataaagt gtcataaact ttttggggaa actatgggaa	300
aaaatgggga aactctgaag ggttttaagt atcttacctg aaggtacaga ctccataacc	360
ttcttttaca gggagctcct gcagccctca cagaaatgag tggctgagat tcttgattgc	420
acagcaagag cttctcctct aaaccccttc cttttttagt atctgtgtat caagtataaa	480
agttotataa actgtagtnt acttatttta atccccaaag cacagt	526

<210> 312

<211> 500

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (500)

<223> n = A, T, C or G

<400> 312

cctctctctc cccacccctt gactctagag aactgggttt tctcccagta ctccagcaat	60
tcatttctga aagcagttga gcaactttat tccaaagtac actgcagatg ttcaaactct	120
ccatttctct tctccttcca cctgccagtt ttgctgactc tcaacttgc atgagtgtaa	180
gcattcaagga cattatgott cttcgattct gaagacaggc cctgctcatg gatgactctg	240
gcttcttagg aaaatatttt tcttccaaaa tcagtaggaa atctaaactt atccccctt	300
tgcagatgct tagcagcttc agacatttgg ttaagaaacc atgggaaaaa aaaaaatcct	360
tgctaattgt gtttcttttg taaccanga ttcttatttg nctgggtatag aatcatcaget	420
ctgaacgtgt ggtaaagatt ttgtgtttg aatataggag aaatcagttt gctgaaaagt	480
tactcttaat tatctattgg	500

<210> 313

<211> 718

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (718)

<223> n = A, T, C or G

<400> 313

ggagatttgt gtggtttgca gccgagggag accaggaaga tctgcatggg gggagggacc	60
tgatgatcca gagggtgagaa ataagaagg ctgctgactt taccatctga ggccacacat	120
ctgctgaat ggagataatt aacatcacta gaaacagcaa gatgacaata taatgtctaa	180
gtagtacat gtttttgac atttccagcc cttttaasta tccacacaca caggagacc	240
aaaaggaagc acagagatcc ctgggagaaa tgcccggccg ccattcttggg tcatcgatga	300
gcctogccct gtgcctgntc ccgcttgtga gggagggaca ttagaaaatg aattgatgtg	360
tctctaaag gatggcagga aaacagatcc tgttbtggat atttatttga acgggattac	420
agatttgaaa tgaagtcaaa aagttagcat taccatgag aggaacacag acgagaaaat	480
cttgatggtt cacaagacat gcaacaaca aaatggaata ctgtgatgac acgagcagcc	540
aactggggag gagataccac ggggcagagg tcaggattct ggccttgcct cctaactgtg	600
ogttatacca atcatttcta ttctaccct caaacaagct gtngaataac tgacttacgg	660
ttcttntggc coacatttcc atnaccacc centontttt aannttantic caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314


```

gtttatttac attacagaaa aaacatcaag acaatgtata ctatttcaaa tatatccata    60
cataatcaaa tatagctgta gtacatgttc tcattgggtg agattaccac aaatgcaagg    120
caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg ttagtccaa    180
gtctctggta gtccagccac tgtgaaacat gctcccttta gattaaacct gtggacgctc    240
ttgttgtatt gctgaactgt agtgccctgt attttgcctc tgtctgtgaa tctgttgtt    300
tctggggcat ttccttgtga tgcagaggac caccacacag atgacagcaa tctgaatt    358

```

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

```

taccacctcc ccgctggcac tcatgagccg catcaccatg gtcaccagca ccatgaaggc    60
ataggtgatg atgaggacat ggaatgggcc cccaaggatg gtctgtccaa agaagcgagt    120
gacccccatt ctgaagatgt ctggaaacct taccagcagg atgatgatag cccaatgac    180
agtcaccage tccccgacca gccggatata gtccctaggg gtcatgtagg ctctctgaag    240
tagcttctgc tgtaagaggg lgttgtcccg ggggctcgtg cggttattcg tctggggctt    300
gagggggogg tagatgcagc acatggtgaa gcagatgatg t                    341

```

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

```

agactgggca agactcttac gccccacact gcaatttggt cttgttgccg tatccattta    60
tgtgggacct tctcagttt ctgattataa acaccactgg agcgatgtgt tgactggact    120
cattcaggga gctctggttg caatattagt t                    151

```

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

```

agaactagtg gatcctaagt aaatacctga aacatatatt ggcatttata aatggctcaa    60
atcttcattt atctctggcc ttaacctggt ctccctgagg tgoggccagc agatcccagg    120
ccagggctct gttcttgcca cactgcttg a                    151

```

<210> 318

<211> 151

<212> DNA

<213> Homo sapien

<400> 318

```

actggtggga ggcgtgttt agttggctgt ttccagaggg gtcttccgga gggacctctt    60
gttcagggtt gtagtgtctt tattctctgg gggagaccgc acattccact gctgaggctg    120
tgggggcggt ttatcaggca gtgataaaca t                    151

```

<210> 319

<211> 151

<212> DNA

<213> Homo sapien

<400> 319

```

aactagtggg tccagagcta taggtacagt gtgatctcag ctttgcaaac acattttota    60
catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg    120

```

taagattggg tttatgtgat tttagtgggt a

151

<210> 320

<211> 150

<212> DNA

<213> Homo sapien

<400> 320

aactagtggg tccactagtc cagtgtgggt gaattccatt gtgttgggt tctagatgc 60
gaggggtgc cctttttttt ttttttttg ggggggaatt ttttttttt aatagttatt 120
gagtgttcta cagcttacag taaataccat 150

<210> 321

<211> 151

<212> DNA

<213> Homo sapien

<400> 321

agcaactttg tttttcacc aggttatttt aggtttggg tttctctca cactgcagtt 60
taggttggca ttgtaaccag ctatggcata ggtgttaacc aaaggctgag taaacatggg 120
tgctctgag aatcacaagt cttcatacac t 151

<210> 322

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (151)

<223> n = A,T,C or G

<400> 322

atccagcatc ttctctgtt ttttgccttc ctttttcttc ttcttasatt ctgcttgagg 60
tttgggttg gtcagtttg caccgggtt ggagatggg acagcttctt ggcattcggc 120
atttgcagg gctcgttca naattccagt t 151

<210> 323

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (151)

<223> n = A,T,C or G

<400> 323

tgaggacttg tktttttttt ctttattttt aatctcttta ckttgtaaatt atattgcta 60
nagactcant tactaccag ttgtgggtt twtggggaga atgtaactgg acagtttagct 120
gttcaatya aaagacatt ancccatgtg g 151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> {1}... (461)
 <223> n = A,T,C or G

<400> 324

acctgtgtgg	aatttcagct	ttcctcatgc	aaaaggattt	tgtatccccg	gectacttga	60
agaagtgggc	agctaaagga	atccaggttg	ttgggtggac	tgtaataacc	tttgatgaaa	120
agagttacta	ogaatcccat	cttgggtcca	gctatatcac	tgacagcatg	gtagaagact	180
gggaacctca	cttctagact	ttcaggtggg	gacgaacggg	gttcagaaac	tgccaggggc	240
ctcatacagg	gatatcaaaa	taccttttgt	gtaccccagg	ccctggggga	tcagggtgact	300
caacacaaatg	caatagttgg	tacttgcat	ttacctgaa	ccaaagctaa	acccggtgtt	360
gccaccatgc	accatggcat	gccagagttc	aacactgttg	ctcttgaasa	ttgggtctga	420
aaaaacgcac	aagagccctt	gccttgccct	agctgangca	c		461

<210> 325

<211> 400

<212> DNA

<213> Homo sapien

<400> 325

acactgtttc	catgttatgt	ttctacacat	tgtacacctc	gtgctcctgg	aaacttagct	60
tttgatgtct	ccaagtagtc	caccttcatt	taactctttg	aaactgtatc	atctttgcca	120
agtaagagtg	gtggcctatt	tcagctgctt	tgacasaatg	actggctcct	gacttaacgt	180
tctataaatg	aatgtgctga	agcaaaagtc	ccatggtggc	ggcgaagaag	agaaagatgt	240
gttttgtttt	ggactctctg	tggtcccttc	caatgctgtg	ggtttccaac	caggggaagg	300
gtcccttttg	cattgccaag	tgccataacc	atgagcacta	cgtacccatg	gttctgcttc	360
ctggccaagc	aggctggttt	gcaagaatga	aatgaatgat			400

<210> 326

<211> 1215

<212> DNA

<213> Homo sapien

<400> 326

ggaggactgc	agcccgcact	cgcagccctg	gcaggcggca	ctgggtcatgg	aaaaogaatt	60
gttctgtctg	ggcgtcctgg	tgcatccgca	gtgggtgctg	tcagccgcac	actgtttcca	120
gaactcctac	accatcgggc	tgggcctgca	cagttcttag	gcccagccaag	agccagggag	180
ccagatggtg	gaggccagcc	tctccgtacg	gcacccagag	tacaacagac	ccttgctcgc	240
taaaagacct	atgctcatca	agttggacga	atcogtgtcc	gagtctgaca	ccatccggag	300
catcagcatt	gcttcgcagt	gcccataccg	ggggaactct	tgccctgttt	ctggctgggg	360
tctgctggcg	aacggcagaa	tgccataccg	gctgcagtg	gtgaacgtgt	cgggtgggtg	420
tgaggaggto	tgcatgaagc	tctatgaccc	gctgtaccac	cccagcatgt	tctgcgcccg	480
cggaggggca	gaccagaagg	actcctgcaa	cgggtgactct	ggggggcccc	tgatctgcaa	540
cgggtacttg	cagggccttg	tgtctttcgg	aaaagccccg	tgtggccaag	ttggcgtgcc	600
aggtgtctac	accaacctct	gcaaattcac	tgagtggata	gagaaaaaccg	tcagggccag	660
ttaactctgg	ggactgggaa	cccatgaaat	tgacccccaa	atacatcctg	cgggaaggaa	720
tcaggaatac	ctgttcccag	ccctcctctc	ctcaggccca	ggagtccagg	ccccagcccc	780
ctcctccctc	aaaccaagg	tacagatccc	cagccctccc	tccttcagac	ccaggagtcc	840
agacccccca	gcccctcttc	cctcagaccc	aggagtccag	ccctcctccc	ctcagaccca	900
ggagtccaga	ccccccagcc	cctcctccct	cagacccagg	ggtccaggcc	cccaacctct	960
cctccctcag	actcagaggt	ccaagccccc	aacccctccc	tcctccagac	cagaggtcca	1020
ggtccagacc	cctcctccct	cagacccagc	ggtccaatgc	cacctagact	ctcctgtac	1080
acagtgcctc	cttgtggcac	gttgacccaa	ccttaccagt	tggtttttca	ttttttgtcc	1140
ctttccctca	gatccagaaa	taaagtctaa	gagaagcgca	aaaaaaaaaa	aaaaaaaaaa	1200
aaaaaaaaaa	aaaaaa					1215

<210> 327

<211> 320

<212> PRT

<213> Homo sapien

<400> 327

Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
 1 5 10 15
 Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
 20 25 30
 Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
 35 40 45
 Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
 50 55 60
 Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
 65 70 75 80
 Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
 85 90 95
 Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
 100 105 110
 Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
 115 120 125
 Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
 130 135 140
 Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
 145 150 155 160
 Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
 165 170 175
 Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
 180 185 190
 Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
 195 200 205
 Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 210 215 220

<210> 328

<211> 234

<212> DNA

<213> Homo sapien

<400> 328

cgtctgtctc tggtagctgc agccaaatca taaacgggga ggactgcagc ccgcactcgc 60
 agccctggca ggccggcctg gtcattgaaa accgattggt ctgctcgggc gtccctgtgc 120
 atccgcagtg ggtgtgttca gccacacact gtttcagaa ctctacacc atcgggctgg 180
 gcctgcacag tcttgaggcc gaccaagagc caggagacca gatggtggag gcc 234

<210> 329

<211> 77

<212> PRT

<213> Homo sapien

<400> 329

Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
 1 5 10 15
 Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met Glu Asn Glu Leu
 20 25 30
 Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
 35 40 45
 His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
 50 55 60

Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
65 70 75

<210> 330

<211> 70

<212> DNA

<213> Homo sapien

<400> 330

ccccacacaa tggcccgatc ccacccctga ctccgcccctc aggatcgctc gtctctggta 60
gtgcagcca 70

<210> 331

<211> 22

<212> PRT

<213> Homo sapien

<400> 331

Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu
1 5 10 15
Val Ser Gly Ser Cys Ser
20

<210> 332

<211> 2507

<212> DNA

<213> Homo sapien

<400> 332

tgggtccgct gcagccggca gagatgggtg agtcatgtt cccgctgttg ctctctcttc 60
tgccttctct tctgtatatg gctgcgcccc aaatcaggaa aatgctgtcc agtgggggtgt 120
gtacatcaac tgttcagctt cctgggaaag tagttgttgt cacaggagct aatacaggta 180
tcgggaaggga gacagccaaa gagctggctc agagaggagc tggagtatat ttagcttgcc 240
gggatgtgga aaagggggaa ttggtggcca aagagatcca gaccaagaca gggaaaccagc 300
aggtgttggg gcggaaactg gacctgtctg atactaagtc tattcgagct ttgtctaagg 360
gcttcttagc tgaggaaaag caccctccag ttttgatcaa caatgcagga gtgatgatgt 420
gtccgtactc gaagacagca gatggctttg agatgcacat aggagtcaac cacttgggtc 480
acttctctct aacctctctg ctgctagaga aactaaaggga atcagcccca tcaaggatag 540
taaatgtgtc ttccctcgca catcactctg gaaggatcca ctccataac ctgcaggggc 600
agaaattcta caatgcaggc ctggcctact gtcacagcaa gotagccaac atcctcttca 660
cccaggaaact ggcccgagga ctaaaaggct ctggcgctac gacgtattct gtacaccctg 720
gcacagtccta atctgaactg gttcggcact catctttcat gagatggatg tgggtggctt 780
tctcttttt catcaagact cctcagcagg gagcccgac cagcctgcac tgtgccttaa 840
cagaaggtct tgagattcta agtgggaatc atttcagtga ctgtcatgtg gcattgggtct 900
ctgcccgaagc tcgtaatgag actatagcaa ggcggctgtg ggacgtcagt tgtgacctgc 960
tgggcctccc aatagactaa caggcagtg cagttggacc caagagaaga ctgcagcaga 1020
ctacacagta cttcttgtca aaatgattct ccttcaagg tttcaaaacc tttagcacia 1080
agagagcaaa accttcagc cttgcctgct tgggtgtccag ttaaaactca gtgtactgcc 1140
agattcgtct aaatgtctgt catgtccaga tttactttgc ttctgttact gccagagtta 1200
ctagagatat cataatagga taagaagacc ctcatatgac ctgcacagct cattttctct 1260
ctgaagaata ctactacctt ggagaatcta agctatagca gggatgattt atgcaaattt 1320
gaactagctt ctttgttcc aattcagttc ctcccaacca accagttctt acttcaagag 1380
ggccacactg caacctcagc ttacatgaa taacaaagac tggctcagga gcagggtctg 1440
cccgagcatg gtggatcacc ggaggtcagc agttcaagac cagcctggcc aacatggtga 1500
aaccctacct ctactaaaaa ttgtgtatat ctttgtgtgt ctctctgttt atgtgtgcca 1560
agggagtatt ttcacaaagt tcaaaacagc cacaataatc agagatggag caaaccagtg 1620
ccatccagtc tttatgcaaa tgaatgtctg caaagggaag cagattctgt atatgttgg 1680
aactacccac caagagcaca tgggtatgag ggaagaagta aaaaagaga aggagaatac 1740

tggeagataa	tgacacaaat	gaagggaacta	gttaaggatt	aactagccct	ttaaggatta	1800
actagttaag	gattoatagc	aaaageyatt	aaatatgcta	acatagctat	ggagggaattg	1860
agggcaagca	cccaggactg	atgaggctt	aacaaaaacc	agtgtggcaa	aaaaaaanaa	1920
aaaaaaanaa	aaaaatccta	aaaacaaaca	aacaaaaaaa	acaattcttc	attcagaaaa	1980
attatcttag	ggactgatat	tggttaattat	ggtcaattta	ataatatttt	ggggcatttc	2040
cttactttgt	cttgacaaaga	ttaaaatgtc	tgtgccccaa	ttttgtattt	tatttggaga	2100
cttcttatac	aaagttaattg	tgcacaaagga	agtctaagga	attagtagtg	ttccccatcg	2160
ttgtttggag	tgtgctattc	taaaagattt	tgatttcctg	gaatgacaat	tatatcttaa	2220
ctttgggtggg	ggaaaagagt	ataggaccac	agtcttcaat	tctgataact	gtaaattaat	2280
cttttattgc	acttgttttg	accattaagc	tatatgttta	gaaatggta	ttttacggaa	2340
aaattagaaa	aattctgata	atagtgcaga	ataaatgaat	taatgtttta	cttaatttat	2400
attgaaactgt	caatgacaaa	taaaaatttt	ttttgattat	tttttgtttt	catttaccag	2460
aataaaaacg	taagaattaa	agtttgatt	acaaaaaaa	aaaaaaa		2507

<210> 333

<211> 3030

<212> DNA

<213> Homo sapien

<400> 333

gcagggcact	tgagagctgg	gagcgattta	aaacgctttg	gattcccccg	gcctgggtgg	60
ggagagcgag	ctgggtgccc	cctagattcc	ccgccccccg	acotcatgag	cagaccctcg	120
gctccatgga	gccccgcaat	tatgccacct	tgatggagc	caaggatata	gaaggcttgc	180
tgggagcggg	agggggcggg	aatctggtcg	cccaactccc	tctgaccagc	cacccagcgg	240
cgccatcgct	gatgcctgct	gtcaactatg	cccccttgg	tctgcccagg	tggggggagc	300
cgccaaagca	atgcccacca	tgccctgggg	tgccccaggg	gacgtcccca	gctcccttgc	360
cttatgggta	ctttggaggc	gggtactact	ccctgcccag	gtcccgagc	tccctgaaac	420
cctgtgcccc	ggcagccacc	ctggcccgct	accccgccga	gactcccaac	gcccgggaag	480
agtaaccacg	ycgccccact	gagtttgcc	tatatccggg	atatccggga	acctaccagc	540
ctatggcgag	ttaccctggc	gtgtctgtgg	tgccgactct	gggtgtctct	ggagaaaccc	600
gacatgactc	cctgtttgct	gtggacagtt	accagctctg	ggctctcgct	gggtggttga	660
acagccagat	gtgttgccag	ggagaaacga	acccaccagg	tcccttttgg	aaggcagcat	720
ttgcagactc	cagcggggag	caccctctcg	acgcttgcgc	ctttgctcgc	ggcggcaaga	780
aacgcattcc	gtacagcaag	gggcagttgc	gggagctggg	gcccggagat	gcccgtacac	840
agttcatcac	caaggacaaag	agggcgcaaga	tctcggcagc	caccagcctc	tccggagcgc	900
agattaccat	ctggtttcag	aacgcggggg	tcaaaagaga	gaaggttctc	gccaaggtga	960
agaacagcgc	taccctttaa	gagatctctc	tgcttgggtg	ggaggagcga	aagtgggggt	1020
gtctctggga	gaccaggaac	ctgcraagcc	caggctgggg	ccaaggactc	tgctgagagg	1080
cccttagaga	caacacccct	cccaggccac	tggctgctgg	actgttcttc	aggagcggcc	1140
tgggtaccca	gtatgtgcag	ggagaogga	ccccatgtga	cagcccaact	caccaggggt	1200
ccccagaaac	ctggccccag	catatctact	catcttgaca	gtggcaataa	tcacgataac	1260
cagtactagc	tgccatgata	gttagcctca	tattttctat	ctagagctct	gtagagcaat	1320
ttagaaaccg	ctttcatgaa	ttgagctaat	tatgaataaa	tttggaaagg	gatccctttg	1380
cagggaagct	ttctctcaga	cccccttcca	ttacacctct	caccctggta	acagcaggaa	1440
gactgaggag	aggggaacgg	gcagattcgt	tgtgtggctg	tgatgtcogt	ttagcatttt	1500
tctcagctga	cagctgggta	ggtggacaat	tgtagaggct	gtctctctct	cctctctgt	1560
ccaccccata	gggtgtaccc	actggtcttg	gaagcaccac	tccttaatac	gatgattttt	1620
ctgtcgtgtg	aaaatgaagc	cagcaggctg	ccccatgtca	gtccttccct	ccagagaaaa	1680
agagatttga	gaaagtgcct	gggttaattca	ccattaattt	cctcccccaa	actctctgag	1740
tcttccctta	atatttctgg	tggttctgac	caaagcaggt	catgggtttg	tgagcatttg	1800
ggatccragt	gaagttagat	ttttagctct	tgcatactta	gccccctcca	ggcacaacag	1860
gggtggcaga	gtggtgcccc	ccctgttttc	ccagtcacag	tagacagatt	cacagtgcgg	1920
aattctggaa	gctggagaca	gacgggctct	ttgcagagcc	gggaactctg	gagggacatg	1980
agggcctctg	cctctgtgtt	cattctctga	tgtctctgtc	ctgggctcag	tgcccgggtg	2040
gactcatctc	ctggccgcgc	agcaaaagca	gcygggtcgt	gctgggtcct	cctgcacctt	2100
agggctgggg	tggggggcct	gcggggccat	tctccacgat	tgagcgacac	ggcctgaagt	2160
ctggacaaac	cgcaaaaccc	aagctccgag	cagcgggtcg	gtggcgagta	gtggggctcg	2220
tggcgagcag	ttggtggtgg	gcccggggcg	ccactacctc	gaggacattt	ccctcccgga	2280

gccagctctc	ctagaaaccc	cgggcgggcc	gccgcagcca	agtgtttatg	gcccggggtc	2340
gggtgggac	ctagccctgt	ctcctctcct	gggaaggagt	gagggtggga	cgtgacttag	2400
acacctaca	atctatttac	caaagaggag	cccgggactg	agggaaaagg	ccaaagagt	2460
tgagtgcag	cggaactggg	gttcaggggg	agaggacgag	gaggagggaag	atgagggtcga	2520
tttcttgatt	taaaaaatcg	tccaaagccc	gtsgtccagc	ttagggtcct	oggttacatg	2580
cgccgctcag	agcagggtcac	tttctgcctt	ccacgtccct	cctcaaggaa	gccccatgtg	2640
ggtagcttct	aatatcgag	gttcttactc	ctctgcctct	ataagctcaa	accaccaac	2700
gacggggca	gtaaaccccc	tcctctgcct	acttcggaac	tgggcgaggt	tcagcgccga	2760
tgggcctgtg	gggagggggc	aagatagatg	agggggagcg	gcctggtgag	gggtgacccc	2820
ttggagagag	gaaaaaggcc	acaagagggg	ctgccaccgc	cactaacgga	gatggccctg	2880
gtagagacct	ttgggggtct	ggaacctctg	gactccccat	gctctaactc	ccacactctg	2940
ctatcagaaa	cttaaacctg	aggattttct	ctgtttttca	ctcgcaataa	aytcagagca	3000
aaacaaaaaa	aaacaaaaaa	aaaactcgag				3030

<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

ggggcgcgct	ctagagctag	tgggatcccc	cgggctgcac	gaattcggca	cgagtgaagtt	60
ggagttttac	ctgtattgtt	tttaatttcaa	caagcctgag	gactagccac	aatgtatccc	120
agttttacaaa	tgaggaaaca	ggtgcaaaaa	ggttggtacc	tgtcaaagg	cgtatgtggc	180
agagccaaaga	tttgagccca	gttatgtctg	atgaacttag	cctatgctct	ttaaactctt	240
gaatgctgac	cattgaggat	atctaasctt	agatcaattg	cattttccct	ccaagactat	300
ttactttatca	atacaataat	accaccttta	ccaatctatt	gttttgatac	gagactcaaa	360
catgccagat	atatgtaaaa	gcaacctaca	agctctctaa	tcattgctcac	ctaaaagatt	420
ccggggatct	aataggctca	aagaaacttc	ttctagaaat	ataaaagaga	aaattggatt	480
atgcaaaaat	tcattactaa	tttttttcat	ccatccttta	attcagcaaa	catttatctg	540
ttgtcgactt	tatgcagtat	ggccttttaa	ggattggggg	acagggtgaag	aacgggggtgc	600
cagaatgcat	cctcctacta	atgaggctcag	tacacatttg	cattttaaaa	tgcctctgtc	660
agctggggcat	ggtgggtcat	gcrtgtaate	tcaacatttg	aaggccaagg	caggaggatt	720
gcttcagccc	aggagttcaa	gaccagcctg	ggcaacatag	aaagacccca	tctctcaatc	780
aatcaatcaa	tgccctgtct	ttgaaaataa	aactctttta	gaaagggtta	atggggcagg	840
tggtgtagct	cagcctata	atacagcact	ttgggaggct	gaggccaggag	gatcacttta	900
gcccagaagt	tcaagaccag	cctgggcaac	aagtgcacac	tcactctaat	tttttaataa	960
aatgaataca	tacataagga	aagataaaaa	gaaaagttta	atgaaagaat	acagtataaa	1020
acaaatctct	tggacctaaa	agtatttttg	ttcaagccaa	atattgtgaa	tcacctctct	1080
gtgttgagaa	tacagaatat	ctaagcccn	gaacttgagc	agaaagttca	tgtactaaat	1140
aatcaaacccg	aggcaaggca	aaaatgagac	taactaatca	atccgaggca	aggggcaaat	1200
tagacggaac	ctgactctgg	totattaagc	gacaactttc	cctctgttgt	atttttcttt	1260
tattcaatgt	aaaaggataa	aaactctcta	aaactaaaaa	caatgtttgt	caggagttac	1320
aaaccatgac	caactaatca	tgggggaatca	taaaatatga	ctgtatgaga	ctttgatggg	1380
ttacaagtg	tacccactgt	taactacttt	aaacattaat	gaacttaaaa	atgaattttac	1440
ggagattgga	atgtttcttt	cctgttgtat	tagttggctc	aggtgtccat	aaacaaatac	1500
cacagactgg	gaggcttaag	taacagaat	tcattttctca	cagttcttgg	ggctgggaat	1560
ccacgatcaa	ggtgcaggaa	aggcaggctt	cattctgagg	ccccctctct	ggctcacatg	1620
tgcccccct	cccactgcgt	gctcacatga	cctctttgtg	ctcctggaaa	gagggtgtgg	1680
gggacagagg	gaaagagaag	gagagggaac	tctctgggtg	ctcgtcttct	aaggacccta	1740
acctggggcca	ctttggccca	ggcactgtgg	ggtggggggg	tgtggctgct	ctgctctgag	1800
tggccaagat	aaagcaacag	aaaaatgtcc	aaagctgtgc	agcaaaagaca	agccaccgaa	1860
cagggatctg	ctcatcagtg	tggggacctc	caagtcggcc	accctggagg	caagccccca	1920
cagagcccat	gcaagggtgg	agcagcagaa	gaagggaatt	gtccctgtcc	ttggcacatt	1980
cctcacccgac	ctggtgatgc	tggacactgc	aatgtggatg	agaatatgat		2040
ggactccag	aaaaggagag	ccagctgctc	aggtggctgc	aaatcattac	agccttcac	2100
ctggggagga	actggggggc	tggttctggg	tcagagagca	gcccagtgag	ggtgagagct	2160
acagcctgtc	ctgccagctg	gatccccagt	cccggtcaac	cagtaatcaa	ggctgagcag	2220
atcaggcttc	caggagctag	tcttgggaag	ccagccctgg	ggtaggttgg	ctcctgctgt	2280

ggtaactgaga caatatgtgc ataaattcaa tgcgcccttg tatccctttt tcttttttat 2340
 ctgtctacat ctataatcac tatgcatact agtcttttgtt agtggtttcta ttomaactaa 2400
 tagagatatg ttataact 2417

<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

atccctccct ccccaactct ctttccagaa ggcacttggg gtcttatctg ttggactctg 60
 aaaacacttc aggcgccctt ccaaggcttc cccaaacccc taagcagcog cagaagcgtc 120
 cccgagctgc cttctccac actcaggtga tgcagttgga gaggaagttc agccatcaga 180
 agtaacctgc gggccctgaa cgggcccacc tggccaagaa cctcaagctc acggagaccc 240
 aagtgaagat atggttccag aacagacgct ataagactaa gcgaagcag ctctcctcgg 300
 agctgggaga cttggagaag cactccctct tgcgggccct gaaagaggag gccttctccc 360
 gggcctccct ggtctccgtg tataacagct atccttacta cccataacct tactgcgtgg 420
 gcagctggag cccagctttt tggtaatgcc agctcaggtg scaaccatta tgatcaaaaa 480
 ctgcctcccc cagggtgtct ctatgaaaag gagatttgcg tggaaatctc aaattcttca ctggtgagac 540
 tgtgcacacc aaagctattg gagatttgcg tggaaatctc aaattcttca ctggtgagac 600
 aatgaacaaa cagagacagt gaaagtttta atacctaatg cattccccca gtgcatactg 660
 taggtcattt cttttgcttc tggctacctg ttggaagggg agagagggga aatcaggtgg 720
 tattttccag cactttgtat gattttggat gagctgtaca cccaaggatt ctgtttctgca 780
 actccatcct cctgtgtcac tgaatatcaa ctctgaaaga gcaaacctaa caggagaaaag 840
 gacaaccagg atgaggatgt caccactga attaaactta agtccagaag cctcctgttg 900
 gccttggat atggccaagg ctctctctgt cctctgtaaaa gagaggggca aatagagagt 960
 ctccaagaga acgcctcat gctcagcaca tatttgcagt gtagggggag atgggtggga 1020
 ggagatgaaa atatcagctt ttcttattcc tttttattcc ttttaaaatg gtatgccac 1080
 ttaagtattt acaggggtgg ccaaatagaa caagatgcac tgcgtgtgat ttaagacaa 1140
 gctgtataaa cagaactcca ctgcaagagg gggggccggg ccaggagaat ctccgcttgt 1200
 ccaagacagg ggcctaagga ggggtctcac actgctgcta ggggtgttg cattttttta 1260
 tttagtagaa gtggaaggc cctttctcaa cttttttccc ttgggttgga gaatttagaa 1320
 tcagaagktt cctggagttt tcaggctatc atatatactg tatcctgaaa ggcaacataa 1380
 ttcttctctt cctcctttta aaattttgtg ttcttttttg cagcaattac tcaactaaagg 1440
 gcttcatttt agtccagatt tttagctcgg ctgcacctaa cttatgcctc gcttatttag 1500
 cccgagatct ggtctttttt tttttttttt tttttctctc tccccaaagc tttatctgtc 1560
 ttgaattttt aaaaaagttt gggggcagat tctgaattgg ctaaaagaca tgcattttta 1620
 aaactagcaa ctcttatttt tttcctttta aaatacatag cattaatatc caaatccat 1680
 ttaagaacct gacagctga gaaggctact actgcattta taggaacctc tgggtggtct 1740
 gctgttactt ttgaagctcg acaatctttg agaattcttg catgcagagg aggttaaggg 1800
 tattggattt tcacagagga agaacacagc gcagaatgaa gggccaggct tactgagctg 1860
 tccagtggag ggtcatggg tgggacatgg aaaagaaggc agcctaggcc ctggggagcc 1920
 cagtcactcg agcaagcaag ggaactgagtg agccttttgc aggaasaggc taagaaaaag 1980
 gaaaaccatt cttaaacaca accagaaact gtccaaatgc tttgggaact gtgtttattg 2040
 cctataatgg gtcccaaaa tgggtaacct agacttcaga gagaatgagc agagagcaaa 2100
 ggagaaatct ggtgtcctt ccattttcat tctgttatct caggtgagct ggtagagggg 2160
 agacattaga aaaaaatgaa acaacaaaac aattactaat gaggtaagct gaggcctggg 2220
 agtctcttga ctccactact taattccgtt tagtgagaaa cctttcattt ttcttttatt 2280
 agnaggggca gcttactgtt ggtggcaaaa ttgccaacat aagttastag aaagtggcc 2340
 aatttcaccc cttttctgtt ggtttgggct ccacattgca atgttcaatg ccacgtgctg 2400
 ctgacaccga ccggagtact agccagcaca aaaggcaggg tagcctgaat tgcctttctg 2460
 tctttacatt tcttttaaaa taagcattta gtgctcagtc cctactgagt actotttctc 2520
 tccctccttc tgaatttaat tctttcaact tgcattttgc aaggattaca catttcaact 2580
 tgaatccatc tgtgttgcaa aaaaaaaa aagtgtcttt gtttaaaatt acttggtctg 2640
 tgaatccatc ttgtttttt cccattggaa ctagtcaatta acccatctct gaactggtag 2700
 aaaaacatct gaagagctag tctatcagca tctgacaggt gaattggatg gttctcagaa 2760
 ccatttccac cagacagcct gtttctatcc tgtttaaata attagtttgg gttctctaca 2820
 tgcataacaa accctgctcc aatctgtcac ataaaagtct gtgacttgaa gtttagtcag 2880

ccccccacc aaactttatt ttctatgtg ttttttcaa catatgagtg ttttgaaat 2940
 aaagtaccca tgtctttatt agaaaaaaaa aaaaaaaaaa aaaa 2984

<210> 336
 <211> 147
 <212> PRT
 <213> Homo sapien

<400> 336
 Pro Ser Phe Pro Thr Leu Leu Ser Arg Arg His Leu Gly Ser Tyr Leu
 1 5 10 15
 Leu Asp Ser Glu Asn Thr Ser Gly Ala Leu Pro Arg Leu Pro Gln Thr
 20 25 30
 Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
 35 40 45
 Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
 50 55 60
 Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
 65 70 75 80
 Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
 85 90 95
 Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
 100 105 110
 Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
 115 120 125
 Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
 130 135 140
 Ala Phe Trp
 145

<210> 337
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 337
 Ala Leu Thr Gly Phe Thr Phe Ser Ala
 1 5

<210> 338
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 338
 Leu Leu Ala Asn Asp Leu Met Leu Ile
 1 5

<210> 339
 <211> 318
 <212> PRT
 <213> Homo sapien

<400> 339
 Met Val Glu Leu Met Phe Pro Leu Leu Leu Leu Leu Pro Ph Leu
 1 5 10 15
 Leu Tyr Met Ala Ala Pro Gln Ile Arg Lys Met Leu Ser Ser Gly Val

	20		25		30
Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly					
35		40		45	
Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg					
50		55		60	
Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu					
65		70		75	80
Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val					
	85		90		95
Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys					
	100		105		110
Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala					
	115		120		125
Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met					
	130		135		140
His Ile Gly Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu					
	145		150		155
Leu Glu Lys Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Val Ser					
	165		170		175
Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly					
	180		185		190
Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala					
	195		200		205
Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly					
	210		215		220
Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val					
	225		230		235
Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe					
	245		250		255
Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu					
	260		265		270
Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His					
	275		280		285
Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg					
	290		295		300
Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp					
	305		310		315

<210> 340

<211> 483

<212> DNA

<213> Homo sapien

<400> 340

gcgaggtct gcttcacac ggaggacac agactgttc ctcaagggt cctgctgcc	60
tggacactgg tgggaggcgc tgtttagttg gctgttttca gagggttctt tgggaggac	120
ctctgtgtgc aggtctggagt gtctttatcc ctggcgggag accgcacatt ccaactgctga	180
ggttgtgggg ggggtttatc aggcagtgat aaacataaga tgtoatttcc ttgactccgg	240
ccttcaattt tctcttttgc tgaogacgga gtccgtggtg tcccgatgta actgacct	300
gctccaaacg tgacatcaet gatgtcttcc tgggggttgc tgatggcccg cttgggtcacg	360
tgtcaatct cgcattcga ctcttgcctc aaactgtatg aagacacctg actgcacgtt	420
ttttctgggc ttccagaatt taaagtga aaagcactc cttaagctccg actccgatgc	480
ctg	483

<210> 341

<211> 344

<212> DNA

<213> Homo sapien

<400> 341

ctgctgctga gtcacagatt tcattataaa tagcctccct aaggaaaata cactggaatgc	60
tatttttact aaccattcta tttttataga aatagctgag agtttctaaa ccaactctct	120
gctgccttac aagtattaaa tattttactt ctttccataa agagtagctc aaaatatgca	180
attaatitaa taattctctga tgatgggttt atctgcagta atatgtatat catctattag	240
aettactta atgaaaaact gaagagaaca aaatttctaa ccactagcac ttaagtactc	300
ctgattctta acattgtctt taatgaccac aagacaacca acag	344

<210> 342

<211> 592

<212> DNA

<213> Homo sapien

<400> 342

acagcaaaaa agaaactgag aagccccaty tgcctttctg ttaacatcca cttatccaac	60
caatgtggaa acttcttata cttggttcca ttatgaagtt ggacaattgc tgctatcaca	120
cctggcaggt aaaccaatgc caagagagtg atggaaacca ttggcaagac tttgttgatg	180
accaggattg gaattttata aaaatattgt tgatgggaag ttgctaaagg gtgaattact	240
tccctcagaa gagtgttaag aaaagtcaga gatgctataa tagcagctat tttaatggc	300
aagtgccact gtggaaagag ttccctgtgtg tgctgaagtt ctgaagggca gtcaaattca	360
tcagcatggg ctgtttgggtg caaatgcata agcacaggtc tttttagcat gctggtctct	420
cccggtgctt catgcaata atcgtcttct tctaaatttc tcttaggctt cattttccaa	480
agttcttctt ggtttgtgat gtcttttctg ctttccatta attctataaa atagtatggc	540
ttcagccacc cactcttcgc cttagcttga cagtgaagtc cggctgccgc tg	592

<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

ttcttgacct cctcctcctt caagctcaaa caccacctcc cttattcagg accggcactt	60
cttaatgttt gtggtttct ctcagcctc tcttaggagg ggtaatgggt gagtggcat	120
cttgtaactc tcttctctcc tttcttccc tttctctgcc cgccttccc atcctgctgt	180
agacttcttg attgtcagtc tgtgtcacat ccagtgattg ttttggtttc tgttcccttt	240
ctgactgccc aaggggctca gaaccccagc aatcccttcc ttctactacc ttcttttttg	300
ggggtagtgt gaagggactg aaattgtggg gggaaggtag gaggcacatc aataangagg	360
aaaccaccaa gctgaaaaaa aa	382

<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

ctgggcctga agctgtaggg taaactcagag gcaggcttct gagtgatgag agtccctaga	60
caataggcca cataaacttg gctggatgga acctcacaat aaggtgggtc cctctgttt	120
gttttagggg atgccaaagg taaggccagc tcagttatat gaagagaagc agaacaaca	180
agtctttcag agaaatggat gcaatcagag tgggatcccg gtcacatcaa ggtcacacto	240
caccttcctg tgcctgaatg gttgccaggc cagaaaaatc caccctttac gagtggggct	300
tcgaccttat atcccccgcc cgcgtccctt tctccataaa attcttctta gtactatta	360
ccttcttatt atttgatcta gaaattggcc tctttttacc cctaccatga gccctacaaa	420
caactaacct gccactaata gttatgtcat cctcttatt aatcctcctc ctagecctaa	480
gtctggccta tgagtgaacta caaaaaggat tagactgagc cgaataacaa aaaaaa	536

<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

acctttttgag gtctctctca ccacctccac agccacccgtc accgtgggat gtgctggatg	60
tgaatgaagc ccccatcttt gtgcctctctg aaaagagagt ggaagtgtcc gaggactttg	120
gcgtgggcca ggaatcaca tcttccactg cccaggagcc agacacattt atggaacaga	180
aaatsacata tcggatttgg agagacactg ccaactggct ggagattaat ccggacactg	240
gtgccatttc c	251

<210> 346

<211> 282

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(282)

<223> n = A,T,C or G

<400> 346

cgctctctg acactgtgat catgacaggg gtccaacacg aaagtgcctg ggccctcctt	60
ctaagtcttg ttaccaaaaa aaggaamaag aaaagatctt ctacgttaca aattctggga	120
agggagacta taactgtgtc ttgccttaag tgagaggtct tccctccgc accaaaaaat	180
agaaaggctt tctatttcac cggcccaggt aggggggaagg agagtaactt tgagtctgtg	240
ggtctcattt cccaaggtgc cttaantgt catnaaaacc aa	282

<210> 347

<211> 201

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(201)

<223> n = A,T,C or G

<400> 347

acacacataa tattataaaa tgccatctaa ttggaaggag ctttctatca ttgcaagtca	60
taaatataac ttttaaaaaa ntactancag cttttaccta ngctcctaaa tgcttgtaaa	120
tctggagactg actggaccca cccagaccca gggcaazgat acatgttacc atatactctt	180
tataaagaat ttttttttgt c	201

<210> 348

<211> 251

<212> DNA

<213> Homo sapien

<400> 348

ctgttaatca caacatttgt gcatcacttg tgccaagtga gaaatgttc taaaatcaca	60
agagagaaca gtgccagaat gaaactgacc ctaagtccca ggtgccccg ggcaggcaga	120
aggagacact cccagcatgg aggagggttt atcttttcat cctaggtcag gtctacaatg	180
ggggaagggtt ttattataga actcccaaca gccacactca ctectgccc acaccgatg	240
gccctgcttc c	251

<210> 349

<211> 251

<212> DNA

<213> Homo sapien

<400> 349

taaaaatcaa gccatttaat tgtatctttg aaggtaaaaca atatatggga gctggatcac	60
aaacccctgag gatgccagag ctatgggtcc agaacatggg gtggtattat caacagagtt	120
cagaagggtc tgaactctac gtgttaccag agaacataat gcaattcatg cattccactt	180
agcaattttg taaaatarca gaaacagacc ccaagagtct ttcaagatga ggaaaattca	240
actcctggtt t	251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

ctggacactt tgcgagggct tttgctggct gctgctgctg ccggtcatgc tactcatcgt	60
agcccgcccg gtgaagctcg ctgctttccc taactcctta agtgactgcc aaacgccccac	120
cggtctggaat tgetctggtt atgatgacag agaaaatgat ctcttccctct gtgacaccaa	180
cacctgtaaa tttgatgggg aatgtttaag aattggagac actgtgactt gcgtctgtca	240
gttcaagtgc aacaatgact atgtgctgtt gtgtggctcc aatggggaga gctaccagaa	300
tgagtgttac ctgcgacagg ctgcatgcaa acagcagagt gagatacttg tgggttcaga	360
aggatcatgt gccacagtcc atgaaggctc tggagaaact agtcaaaagg agacatccac	420
ctgtgatatt tgcagtttg gtgcagaatg tgacgaagat gccgaggatg tctggtgtgt	480
gtgtaattat gactgttctc aaaccaactt caatccctc tgcgcttctg atgggaaatc	540
ttatgataat gcatgcaaaa tcaaaagagc atcgtgtcag aaacaggaga aaatcgaggt	600
catgtctttg ggtcgatgtc aagataaac aactacaact actaagctctg aagatgggca	660
ttatgcaaga acagattatg cagagaatgc taacaaatta gaagaaagtg ccagagaaca	720
ccacatacct tgtccggaac attacaatgg cttctgcatg catgggaagt gtgagcatcc	780
tatcaatatg caggagccat cttgcagggt tggatgctgt tatakaggac aacactgtga	840
aaaaaaggac tacagtgttc tatacgttgt tcccggtcct gtacgatttc agtatgtctt	900
aatcgag	908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

ccagttattt gcaagtggta agagcctatt taccataaat aatactaaga accaactcaa	60
gtcaaacctt aatgccattg ttattgtgaa ttaggattaa gtagtaattt tcaaaattca	120
cattaaacttg attttaaaat cagwtttgyg agtcatttac cacaagctaa atgtgtacac	180
tatgataaaa acaaccattg tattcctgtt ttctctaaaca gtccctaattt ctaacactgt	240
atatatcctt cgacatcaat gaacttttgt ttcttttact ccagtaataa agtagggaca	300
gatctgtcna caacaaaactt gccctctcat gcttgcctc taccatgct ctgctccagg	360
tcagcccccct ttggccctgt ttgttttctc aaaaacctaa tctgcttctt gcttttcttg	420
gtaatatata tttagggaag atgttgcttt gccacacac gaagcaaaagt aa	472

<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

ctcaaaagta atctctoggg aatcaaaacca gaaaagggca aggatcttag gcatgggtga	60
tgtggataag gccaggtcaa tggctgcaag catgcagaga aagaggatca tggagaggtg	120
caggctgctt tccgtcctta cgaatgaagac cactgatgag ttccaaaaca ttgccactac	180
atcatggaa agggagggga agccaacca gaaatgggtt ttctctaatc ctgggatacc	240
aataagcaca a	251

<210> 353
 <211> 436
 <212> DNA
 <213> Homo sapien

<400> 353
 tttttttttt tttttttttt ttttttacaa caatgcagtc atttatttat tgagtatgtg 60
 cacattatgg tattattact atactgatta tatttatcat gtgacttcta attaraaaat 120
 gtatctaaaa gcaaaacagc agatatacaa aattaaagag acagaagata gacattaaca 180
 gataaggcaa cttatacatt gacaatccaa atccaataca tttaaacatt tgggaatga 240
 ggggggcaaa tgggaagccar atcaaatttg tgtaaaacta ttcagtatgt ttccttgcct 300
 tcatgtctga raaggctctc ctttcaatgg ggatgacaaa ctccaaatgc cacacaaatg 360
 ttaacagaat actagattca cactggaacg ggggtaaaga agaattatt tttatanaa 420
 gggctcctaa tgtagt 436

<210> 354
 <211> 854
 <212> DNA
 <213> Homo sapien

<400> 354
 ctttttctag ttcaccagtt ttctgcaagg atgctgggta gggagtgtct gcaggaggag 60
 caagtctgaa accaaatcta ggaaacatag gaaacgagcc aggcacaggg ctgggtgggccc 120
 atcagggacc accctttggg ttgatatttt gcttaactct catcttttga gtaagatcct 180
 ctggcagtag aagctgttct ccaggtagat ttctctagct catgtacaaa aacatcctga 240
 aggactttgt caggtgcctt gctaaaagcc agatgcgttc ggcacttccct tggctcaggg 300
 ttaattgcac acctacagge actgggctca tgccttcaag tattttgtcc tcactcttagg 360
 gtgagtgaan gatccctatt ataggagcac ttgggagaga tcatataaaa gctgactctt 420
 gagtacatgc agtaatgggg tagatgtgtg tgggtgtgtc tcatctctgc aagggtgctt 480
 gttagggagt gtttcacagga ggaacaagtc tgaaccaat catgaaataa atggtaggtg 540
 tgaactggaa aactaattca aaagagagat cgtgatatac gtgtgggtga tacaccttgg 600
 caatatggaa ggtcttaatt tgcctatatt tgaataata attcagcttt ttgtaataca 660
 aaataacaaa ggattgagaa tcatgggtgc caatgtataa aagaaccagg aaacataaat 720
 atatcaactg cataaatgta aaatgcctgt gacccaagaa ggccccaag tggcagacaa 780
 cattgtacc attttccctt ccaaaatgtg agcggcgagg ctgctgcttt caaggctgtc 840
 acacgggatg ttag 854

<210> 355
 <211> 676
 <212> DNA
 <213> Homo sapien

<400> 355
 gaaatttaagt atgagctaaa ttccctgtta aaacctctag ggggtgacaga tctcttcaac 60
 caggtcaaaag ctgatcttct tggaaatgtca ccaaccaagg gcctatatatt atcaaaaagcc 120
 atccacaagt catacctgga tgtcagcgaa gaggggcagg aggcagcagc agccactggg 180
 gacagcatcg ctgtaaaaag cctaccaatg agagctcagt tcaaggcgaa ccaccccttc 240
 ctgttcttta taaggcacac toataccac acgatcctat tctgtggcaa gcttgccctc 300
 cctaatcag atggggttga gtaaggctca gagttgcaga tgagggtgcag agacacatcct 360
 gtgactttcc cagggcacaa aagctgttca caccctcagc acctctgtgc ctcagtttgc 420
 tcatctgcaa aataggtcta ggatttcttc caaccatttc atgagttgtg aagctaaggc 480
 tttgttaate atggaaaaag gtagacttat gcagaaagcc tttctggctt tcttatctgt 540
 ggtgtctcat ttgagtgtcg tccagtgaac tgatcaagtc aatgagtaaa attttaaggg 600
 attagatttt cttgacttgt atgtatctgt gagatcttga ataatgacc tgacatctct 660
 gcttaagaa aaccag 676

<210> 356

<211> 574
 <212> DNA
 <213> Homo sapien

<400> 356

tttttttttt tttttcagga aaacattctc ttaactttatt tgcactctcag caaagggttct	60
catgtggcac ctgactggca tcaaaccaaa gttagtaggc caacaagat gggccactca	120
caagcttccc attttagat ctgagtgcct atgagtatct gacacctgtt cctctcttca	180
gtctcttagg gaggcttaaa tctgtctcag gtgtgctaag agtgccagcc caaggkgtc	240
aaaagtccac aaaactgcag tctttgctgg gatagtaagc caagcagtgc ctggacagca	300
gagttctttt cttagggcaac agataaccag acaggactct aatcgtgctc ttattcaaca	360
ttcttctgtc tctgcttaga ctggaataaa aagccaatct ctctcgtggc acaggggaagg	420
agatacaagc tcttttacct gtgatagatc taacaaaggc atctacogaa gtctggtctg	480
gatagacggc acagggagct cttaggtcag cgtcgtcgtt tggaggacat tcttgagtc	540
agctttgcag cctttctgca acagtacttt ccca	574

<210> 357
 <211> 393
 <212> DNA
 <213> Homo sapien

<400> 357

tttttttttt tttttttttt tttttttttt tacagaatat aratgcttta tcaactgkact	60
taatatggkg kcttggtccac tatacttaaa aatgcaccac tcatanatat ttaattccagc	120
agggcccaac caaracttga ttttatcaac aaaaaccctt aaatataaac ggsaaaaaag	180
atagatatata ttattccagt ttttttaaaa cttaaaarat attccattgc cgaattaa	240
araarataag tgttatatgg aaagaagggc attcaagcac actaaaraaa cctgaggkaa	300
gcataatctg tacaaaafta aactgtcctt tttggcattt taacaaattt gcaacgktct	360
tttttttttt tttctgtttt tttttttttt tac	393

<210> 358
 <211> 630
 <212> DNA
 <213> Homo sapien

<400> 358

acagggctaa caggaggatc ctgtctctca cggagcttao attctagcag gaggacaata	60
ttaattgttta tagganaatg atgagtttat gacaaaggaa gtatagatgt ttttcaaga	120
gcataagata ggaagctaa tccagcacag ggaggtcaca gagacatccc taaggagtg	180
gagtttaaac tgagagaagc aagtgtctaa actgaaggat gtgttgaaga agaaggaga	240
gtagaacaat ttgggcagag ggaacettat agaccctaag gtgggaaggc tcaaggact	300
gaaagagagc tagaacagct ggagccgttc tccggtgtaa agaggagtca aagagataag	360
attaaagatg tgaagattaa gatcttggtg gcattcaggg attggcactt ctacaagaaa	420
tcaactgaag gagtaatgtg acattacttt tcaactcagg atggccattc taactccagg	480
gggtagactg gactaggtaa gactggaggg aggtagacct ctctcaggg ctgcgagatg	540
gaaagacaaa aataagtggg gaaattcagg ggatagtga aatcagtagg acttaatgag	600
caagccagag gttcctccac aacaaccagt	630

<210> 359
 <211> 620
 <212> DNA
 <213> Homo sapien

<400> 359

acagcattcc aaaatatata tctagagact aarrgtaaat gctctatagt gaagaagtaa	60
taattaaaaa atgetactaa tctagaaat ttataatcag aaaaataaat attcagggag	120
ctcaccagaa gaataaagtg ctctgccagt tattaaagga ttactgctgg tgaattaaat	180
atggcattcc ccaagggaaa tagagagatt ctctggtatt atgttcaata tttatttca	240

```

aggattaact gtttttaggaa cagatataaa gcttcgccac ggaagagatg gacaaagcac 300
aasgacaaaca tgatacctta ggaagcaaca ctaccccttc aggcataaaa tttggagaaa 360
tgcaacatta tgcttcattga ataatatgta gaaagaaggt ctgatgaaaa tgacatcctt 420
aatgtaagat aactttataa gaattcttgg tcaataaaaa ttctttgaag aaaacatoca 480
aatgtcattg acttatcaaa tactatcttg gcataatacc tatgaaggca aaactaaaca 540
aacaaaaagc tccacaaaa caaaaccatc aacttatttt gtattctata scatacgaga 600
ctgtaasgat gtgacagtgt 620

```

<210> 360
 <211> 431
 <212> DNA
 <213> Homo sapien

```

<400> 360
aaaaaaaaaa agccagaaca acatgtgata gataatatga ttggtgcac acttcagac 60
tgatgaatga tgaactgat ggaactattgt atggagcaca tcttcagcaa gagggggaaa 120
tactcatcat ttttgccag cagttgtttg atcaccaaac atcatgccag aatactcagc 180
aaacctcttt agctcttgag aagtcaaagt ccgggggaat ttattccttg caattttaat 240
tggaactcct atgtgagagc agcggtacc cagctgggtt ggtggagcga acccgtaact 300
agtggacatg cagtggcaga gctccttgta accacctaga ggaatacaca ggcacatgtg 360
tgatgcaag cgtgacacct gtgacactca aatttgtctt gtttttgtct ttcggtgtgt 420
agattcctag t 431

```

<210> 361
 <211> 351
 <212> DNA
 <213> Homo sapien

```

<400> 361
aacatgattt ccgatcaaaa gaatcateat ctttaccttg acttttcagg gaattactga 60
actttcttct cagaagatag ggcacagcca ttgccttggc ctcaactgaa gggctctgcat 120
ttgggtcttc tgggtctttg ccaagtttcc cagccactcg agggagaaat atcgggaggt 180
ttgacttctt ccggggcttt cccgagggct tcaccgtgag ccttgccgcc ctcaaggctg 240
caatcctgga ttcaatgtct gaaacctcgc tctctgcttg ctggacttct gaggcctcra 300
ctgccactct gtctccagc tctgacagct cctcatctgt ggtcctgttg t 351

```

<210> 362
 <211> 463
 <212> DNA
 <213> Homo sapien

```

<400> 362
acttcacag gccataatgg gtgcctcccg tgagaatcca agcaccttg gactgogcga 60
tgtagatgag ccggctgaag atcttgcca tgcgcggctt cagggcgaag ttcttggcgc 120
ccccggtaac agaaatgacc aggttgggtg ttttcagggt ccagtgcctg gtcagcagct 180
cgtaaaggat ttccggctcc gtgtcragg acagacgtat atacttccct ttcttcccca 240
gtgtctcaaa ctgaatatcc ccaaggcgt cggtaggaaa ttcttgggtg tgtttcttgt 300
agttccattt ctcaatttgg ttgatctggg tgccttccat gtcttggtc tgggcatagc 360
cacacttgca cacattctcc ctgataagca cgtatggtgt gacaggaagg aaggatttca 420
ttgagcctgc ttatggaaac tggatattgt agcttaataa gac 463

```

<210> 363
 <211> 653
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> {1}...{553}

<223> n - A, T, C or G

<400> 363

acccccaggt	noctgncctg	catactgnga	acgacccaag	acacacccaa	getcggcctc	60
ctcttggnga	ttctgggtga	catcttcatg	aattggcaacc	gtgccagwga	ggctgtcctc	120
tgggaggcac	tacgcaagat	gggaactgct	cctgggggtga	gacatcctct	ccttggagat	180
ctaacgaaac	ttctcaccta	tgagttgtaa	agcagaaata	cctgnactac	agacgagtgc	240
ccaacagcaa	ccccccgaa	gtatgagttc	ctctrgggcc	tccgttccca	ccatgagasc	300
tagcaagatg	naagtgttg	gantcattgc	agaggttcag	aaaagagacc	cntcgtgact	360
ggctctgaca	gttcatggag	gctgagagtg	aggccttggg	tgtctctggg	gctgctgcag	420
ctgaggccga	agccccggct	gaagcaagaa	ccccgatggg	aattggagat	gaggctgtgt	480
ntggggccctg	gagctgggat	gacattgagt	ttgagctgct	gacctgggat	gaggaaggag	540
atcttggaga	tccntgggtc	agaattccat	ttaccttctg	ggccagatac	caccagaatg	600
cccgctccag	attccctcag	acctttgcgc	gtccatttat	tggctctggg	ggc	653

<210> 364

<211> 401

<212> DNA

<213> Homo sapien

<400> 364

actagaggaa	agacgtttaa	ccactctact	accacttgtg	gaactctcaa	agggtaaatg	60
acaaagccaa	tgaatgactc	taaaaacaat	atttacattt	aattggtttg	agacaataaa	120
aaaacaaggt	ggatagatct	agaattgtaa	cattttaaga	aaacctagc	atttgacaga	180
tgagaaagct	caattataga	tgcaaaagta	taactaaact	actatagtag	taagaaata	240
catctcacac	ccttcataata	aattcactat	cttggcttga	ggcactccat	aaaatgtatc	300
acgtgcatag	taaatcttta	tatttgcctt	ggcgttgca	tagaggactt	ggactgcaac	360
aagtggatgc	goggaaaatg	aaatcttctt	caatagccca	g		401

<210> 365

<211> 356

<212> DNA

<213> Homo sapien

<400> 365

ccagtgatcat	atttgggctt	aaaatttcaa	gaagggcact	tcaaatggct	ttgcatttgc	60
atgtttcagt	gctagagcgt	aggaatagac	cctggcgctc	actgtgagat	gttcttcagc	120
taccagagca	tcaagtctct	gcagcaggtc	attcttgggt	aaagaaatga	cttcacaaaa	180
ctctccatcc	cctggccttg	gcttcggcct	tgcgtttctg	gcacatctc	cgttaatggg	240
gactgtcarg	atgtgtatag	tacagtttga	caagcctggg	tccatacaga	ccgctggaga	300
acattlogga	atgtccctt	tgtagccagt	ttcttctctg	agctcccgga	gagcag	356

<210> 366

<211> 1851

<212> DNA

<213> Homo sapien

<400> 366

tcatcaccat	tggcagcagc	ggcaccgcta	gtcagggttt	ctgggaatcc	ccatgagta	60
cttccgtgtt	cttcattctt	cttcaatagc	cataaatctt	ctagctctgg	ctggctgttt	120
tcaattctct	taagcctttg	tgaactctcc	tctgatgtca	gctttaagtc	ttgttctgga	180
ttgtgtttt	cagaagagat	ttttaacatc	tgtttttctt	tgtagtca	aagtaactgg	240
caaatccat	gatgatgact	agaaacagca	tactctctgg	ccttcttctc	agatcttgag	300
aagatacatc	aacattttgc	tcaagttagg	ggctgactat	acttgctgat	ccacaacata	360
cagcaagtat	gagagcagtt	cttccatctc	tatccagcgc	atttaaatte	gcttttttct	420
tgattaaaaa	tttccaccat	tgtgtttttt	gtcctgtgat	accaagttagc	agtgggtgtga	480
ggccatgctt	gttttttgat	togatatcag	caccgtataa	gagcagtgct	ttggccatta	540

atttatcttc	attgtagaca	gcatagtgta	gagtggtatt	ccataactca	tctggaatat	600
ttggatcagt	gcoatgttcc	agcaacatta	acgcacattc	atcttccctg	cattgtaagg	660
cccttgtcag	agetgtcttc	ttcttgttgt	caaggacatt	aagtcgacat	cgtctgtcca	720
gcacgagttt	tactacttct	gaattcccat	tggcagaggc	cagatgtaga	gcagtccctc	780
tttgcttgte	ctcttgttcc	acatccgtgt	ccctgagcat	gacgatgaga	tcctttcttg	840
ggactttacc	ccaccaggca	gctctgtgga	gcttgtccag	atcttctcca	tggagctggt	900
acctgggato	catgaaggcg	ctgtcatcgt	agtctcccca	agcgaccacg	ctgctcttgc	960
cgctccctcg	cagcaggsga	agcagtggca	gcaccacttg	ccctctttgc	tcaccaagct	1020
cttcacagag	gagtcgttgt	ggctcccgga	agtgcaccag	ttgctcttgc	cgtcccccct	1080
gtccatccag	ggagggaagaa	atgcaggaaa	tgaagatgc	atgcaogatg	gtatactcct	1140
cagccatcaa	acttctggac	agcagggtcac	ttccagcaag	gtggagaaag	ctgtccaccc	1200
acagaggatg	agatccagaa	accacaatat	ccattccaaa	acaaacactt	ttcagccaga	1260
cacaggtaact	gaatcatgt	catctgcggc	aacctgggtg	aacctaccga	atcacacate	1320
aagagatgaa	gacactgcag	tatatctgca	caacgttaata	ctcttcatcc	atacaaaat	1380
aataataatt	tcctctggag	ccatatggat	gaactatgaa	ggaagaactc	cccgaagaag	1440
ccagtcgcag	agaagccaca	ctgaagctct	gtccctcagcc	atcagcgcca	cggacagggr	1500
tgtgtttctt	ccccagtgat	gcagcctcaa	gttatcccg	agctgcgcga	gcacacgggtg	1560
gtccttgaga	aacaccccag	ctcttccggg	ctaacacagg	caagtcaata	aattgtataa	1620
tcacataaac	agaattaaaa	gcaaagtcac	ataagcatct	caacagacac	agaaaaggca	1680
tttgacaaaa	tcacgcctcc	ttgtatttat	tgctgcagtt	ctcagaggaa	atgcttctaa	1740
cttttcccca	tttagtatta	tgttggctgt	ggccttgcca	taggtgggtt	ttattacttt	1800
aaggtatgtc	ccctctatgc	ctgttttgc	gaggggttta	attctcgtgc	c	1851

<210> 367

<211> 668

<212> DNA

<213> Homo sapien

<400> 367

cttgagcttc	caaataygga	agactggccc	ctacacaggt	caatgttaaa	atgaatgcac	60
ttcagtattt	tgaagataaa	atrrgtagat	ctataccttg	ttcttttgatt	cyatctcage	120
accrtataag	agcagtgcct	tggccattaa	tttatctttc	atrrtagaca	gcrtagtgga	180
gagtggtatt	tcataactca	tctggaatat	ttggatcagt	gccatgttcc	agcaacatta	240
acgcacattc	atcttccctg	cattgttaog	ccgttcagta	ttagacccaa	aaacaaatta	300
catatcttag	gaattcaaaa	taacattcca	cagctttcac	caactagtta	tatttaagg	360
agaaaactca	tttttatgcc	atgtattgaa	atcaaaccca	ccctcatgctg	atatagtcgg	420
ctactgcata	cccttatcag	agctgtctcc	tttttgttgt	caaggacatt	aagttgacat	480
cyctctgcca	gcaggagttt	tactacttct	gaattcccat	tggcagaggg	cagatgtaga	540
gcagtcctat	gagagtgaga	agacttttca	ggaaattgta	gtgcactago	tacagccata	600
gcaatgatcc	atgtaactgc	aaacactgaa	tagcctgcta	ttactctgcc	ttcaaaaaaa	660
aaaaaa						668

<210> 368

<211> 1512

<212> DNA

<213> Homo sapien

<400> 368

gggtgcacca	ggggggcggt	gggttttcc	cggttgggtg	tgggttttcc	ctgggtgggg	60
tgggtcgggc	trgaatcccc	tgctggggtt	ggcaggtttt	ggctgggatt	gaacttttyc	120
ttcaaacaga	ttggaaaccc	ggagttaoct	gctagtgggt	gaaactgggt	ggtagaogcg	180
atctgttggc	tactactggc	ttctcctggc	tgttaaaagc	agatgggtgg	tgaggttgat	240
tcctatggcg	ctgcttcttc	tgtgaagaag	ccatttgggt	tcaggagcaa	gatgggcaag	300
tgggtgctgc	gttgcctccc	ctgctgcagg	gagagcgcca	agagcaacgt	gggcacttct	360
ggagaccacg	acgactctgc	tatgaagaca	ctcaggagc	agatgggcaa	gtgggtgcgc	420
cactgcttcc	ccctctgcag	ggggagtggc	aagagcaacg	tgggcgcttc	tggagaccac	480
gacgagtctg	ctatgaagac	actcaggaac	aagatgggca	agtgggtgctg	ccactgcttc	540
ccctgctgca	gggggagcrg	caagagcaag	gtgggcgctt	ggggagacta	cgatgacagt	600

gccttcattg	agcccaggta	ccacgtccgt	ggagaagato	tggacaagct	ccacagagct	660
gcctgggtggg	gtaaagtccc	cagaaaggat	ctcatctgca	tgctcagggg	cactgacgtg	720
aacaagaagg	acaagcaaaa	gaggactgct	ctacatctgg	cctctgccaa	tgggaattca	780
gaagtagtaa	aactcctgct	ggacagaaga	tgtcaactta	atgtccttga	caacaaaaag	840
aggacagctc	tgayaaaggc	ogtacaatgc	caggaagatg	aatgtgogtt	aatgttgctg	900
gnacatggca	ctgatccaaa	tattccagat	gagtatggaa	ataccactct	rcactaygct	960
rtctayaatg	aagataaatt	aatggccaaa	gcactgctct	tataygggtg	tgatatcgaa	1020
tcacaaaaaa	aggtatagat	ctaataattt	tatcttcaaa	atgctgaaat	gcattcattt	1080
taacattgac	gtgtgtaagg	gccagtcctc	cgtatttggg	agctcaagca	taacttgaat	1140
gaaatatatt	tgaaatgacc	taattatctm	agactttatt	ttaaatattg	ttattttcaa	1200
agaagcatta	gagggtagag	tttttttttt	ttaaatgcac	ttctggtaaa	tacttttggt	1260
gaaaaacact	aatttgtaaa	aggttaatac	tactattttt	caatttttcc	ctcttaggat	1320
ttttttcccc	taatgaatgt	aagatggcaa	aatttgccct	gaaatagggt	ttacatgaaa	1380
actccaaaga	aagttaasca	tgtttcagtg	aatagagatc	ctgctccttt	ggcaagttcc	1440
taaaaaacag	taatagatac	gaggtgatgc	gcctgtcagt	ggcaagggtt	aagatatattc	1500
tgatctcgtg	cc					1512

<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

gggtgcgcca	gggggggggt	gggttttctt	gggttggttg	tggtttttcc	ctgggtgggg	60
tgggttgggc	trgaatcccc	tgctgggggt	ggcaggtttt	ggctgggatt	gacttttytc	120
ttcaaacaga	tgggaaaccc	ggagttacct	gctagtgggt	gaaactgggt	ggtagacggg	180
atctgttggt	tactactggc	ttctcctggc	tggttaaaag	agatgggtgg	tgaggttgat	240
tcacatgcgg	ctgcttcttc	tgtgaagaag	ccatttggtc	tcaggagcaa	gatgggcaag	300
tggtgctgcc	gttgcttccc	ctgctgcagg	gagagcgcca	agagcaacgt	gggcaattct	360
ggagaccacg	acgactctgc	tatgaagaca	ctcaggagca	agatgggcaa	gtgggtgcgc	420
caactgcttc	cctgctgcag	ggggagtggt	aagagcaacg	tggtggcttc	tggagaccac	480
gargayctcg	ctatgaagac	actcaggaac	aagatgggca	agtgggtgctg	ccactgcttc	540
coctgctgca	gggggagcrg	caagagcaag	gtgggogctt	ggggagacta	cgatgacagy	600
gccttcattg	akcccaaggta	ccacgtccrt	ggagaagatc	tggacaagct	ccacagagct	660
gcctgggtggg	gtaaagtccc	cagaaaggat	ctcatctgca	tgctcagggg	caackgagtg	720
aacaagargg	acaagcaaaa	gaggactgct	ctacatctgg	cctctgccaa	tgggaattca	780
gaagtagtaa	aactcctgct	ggacagaaga	tgtcaactta	atgtccttga	caacaaaaag	840
aggacagctc	tgayaaaggc	ogtacaatgc	caggaagatg	aatgtgcggt	aatgttgctg	900
gaacatggca	ctgatccaaa	tattccagat	gagtatggaa	ataccactct	rcactaygct	960
rtctayaatg	aagataaatt	aatggccaaa	gcactgctct	tataygggtg	tgatatcgaa	1020
tcacaaaaaa	agcatggcct	cacaccactg	ytacttggtr	tacatgagca	aaaacagcaa	1080
gtggtgaaat	ttttaatyaa	gaaaaaagcg	aatttataat	gcrcctggata	gatagggag	1140
ractgctctc	atacttgctg	tatgttggtg	atcagcaagt	atagtcagcc	ytctacttga	1200
gcacaaatrt	gatgtatctt	ctcaagatct	ggaaagacgg	ccagagagta	tgctgtttct	1260
agtcatcatc	atgtaatttg	ccagttactt	cttgactaca	aagaaaaaca	gatgttaaaa	1320
atctcttctg	aaaacagcaa	tcagaaccaa	gacttaagcg	tgacatcaga	ggaagagtca	1380
caagggttta	aagggaagtgc	aaacagccag	ccagagggcat	ggaactttt	aaatttaaac	1440
ttttgggtta	atgttttttt	tttttgctt	aataatatta	gatagtccca	aatgaaatwa	1500
cctatgagac	taggctttga	gaatcaatag	attctttttt	taagaatctt	ttggctagga	1560
gcggtgtctc	aogcctgtaa	ttccagcacc	ttgagaggct	gaggtgggca	gatcagagga	1620
tcaggagatc	gagaccatcc	tggctaaccac	ggtgaaaccc	catctctact	aaaaatacaa	1680
aaacttagct	gggtgtgggtg	gcgggtgctt	gtagtcccag	ctaactcagga	rgctgagggca	1740
ggagaatggc	atgaaccogg	gaggtggagg	ttgcagtgag	ccgagatccg	ccactacact	1800
ccagcctggg	tgacagagca	agactctgtc	tcacaaaaaa	aaaaaaaaaa	aaa	1853

<210> 370

<211> 2184

<212> DNA

<213> Homo sapien

<400> 370

```

ggcaccgagaa ttaaaaccct cagcaaaaca ggcatagaag ggacatacct taagtaata 60
aaaaaccact atgacaagcc caccgccaac ataatactaa atggggaaaaa gttagaagca 120
tttcctctga gaactgcac aataaataca aggatgctgg attttgtcaa atgccttttc 180
tgtgtctgtt gagatgctta tgtgactttg cttttaattc tgtttatgtg attatcacat 240
ttatbgactt geetgtgtta gaccggaaga gctgggggtg ttctcaggag ccacggtgtg 300
ctggcgagc ttcgggataa cttgaggctg catcactggg gaagaaacac aytctgttc 360
gtggcgctga tggctgagga cagagcttca gtgtggcttc tctgcgactg gcttcttcgg 420
ggagttcttc ctccatagtt catccatag gctccagagg aaaattatat tattttgtta 480
tggatgaaga gtattacgtt gtgcagatat actgcagtgt cttcatctct tgatgtgtga 540
ttgggtaggc tccaccatgt tgcgcagat gacatgattt cagtacctgt gctgtgctga 600
aaagtgtttg tttgtgaatg gatattgtgg tttctggate tcatctcttg tgggtggaca 660
gctttctcca ccttgcctga agtgacctgc tgtccagaag tttgatggct gaggagtata 720
ccatctgtga tgcctcttct atttcttgc tttcttctc cctggatgga cagggggagc 780
ggcaagagca acgtgggca ttttgagac cacaacgact cctctgtgaa gacgttggg 840
agcaagaggt gcaagtggg ctgcccactg tccccctgct gcaggggagc ggcaagagca 900
aogtggctgc ttggggagac taccgatgaa gogccttcat gsatccagg taccacgtcc 960
atggagaaga tctggacaag ctccacagag ctgctgtgtg gggtaaagt cccagaagg 1020
atctcactgt catgctcagg gacacggatg tgaacaagg ggacaagcaa aagaggactg 1080
ctctacatct ggctctgccc aatgggaatt cagaagtagt aaaactcgtg ctggacagac 1140
gatgtcaact taatgtcctt gacaacaaaa agaggacagc tctgacaaag gcctgacaat 1200
gccaggaaga tgaatgtgct ttaatgttgc tggacatgg cactgatcca aatattccag 1260
atgagtatgg aaataccact ctacactatg ctgtctacaa tgaagataaa ttaatggcca 1320
aagcactgct ctatcacggt gotgatatcg aatcaaaaaa caagcatggc ctcacaccac 1380
tgtactttgg tatacatgag caaaaaacag aagtgggtga atttttaac aagaaaaaag 1440
cgaatttaaa tgcgctggat agatatggaa gaactgctct catacttget gtatgttgtg 1500
gatcagcaag tatagtcagc cctctacttg agcaaaatgt tgatgtatct tctcaagatc 1560
tggaaagagc gccagagagt atgctgttcc tagtcatcat catgtaattt gccagttact 1620
ttctgactac aaagaaaaac agatgttaaa aatctcttct gaaactaga atccagaaca 1680
agacttaag ctgacatcag aggaagagtc acaaggcctt aaagggaagt aaaaacagca 1740
gccagaggca tggaaacttt taaatttaaa ctttttggtt aatgtttttt ttttttgct 1800
taataatatt agatagtcac aaatgaaatw acctatgaga ctaggctttg agaatcaata 1860
gattcttttt ttaagaatct tttggctagg agcgggtgtc cctgctgtga attccagcac 1920
cttgagaggc tgggtgggc agatcacgag atcaggagat cgagaccatc ctggctaaca 1980
cggtgaaacc ccatctctac taaaaataca aaaacttagc tgggtgtggt ggcggtgtgc 2040
tgtagtccca gctactcagg argctgaggg agggagaatg catgaacccg ggaggtggag 2100
gttgagtgga gccagatcc gccactacac tccagccttg gtgacagagc aagactctgt 2160
ctcaaaaaaa aaaaaaaaaa aaaa

```

<210> 371

<211> 1855

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1855)

<223> n = A,T,C or G

<400> 371

```

tgcacgcatc ggccagtgtc tgtgccacgt acactgaagc cccctgagat gtgcacgccc 60
cagcgccagc ttgcacgccc ggcaggggct tggctggctt gtaacggctt gcacgcccac 120
gcgcgcgcgc cataacggct agactggcct gtaacggctt gcaggcgac gcgcacgccc 180
cgtaacggct tggctggcct gtaacggctt gcacgtgcac gctgcacgag cgtaacggc 240
ttggctggca tgtagcggct tggctggctt ttgcatttct tgtcgggctk ggogttgkty 300
tcttggattg aogcttcttc cttggatkgc cgttctctcc ttggatkgac gttctytyty 360

```

tgcggttcc	ttgctggact	tgaacattty	tctgctgggt	ttggcattcc	tttggggtgg	420
gctgggtgtt	tttcccggg	gggktxgccc	ttcctgggg	gggogtgggk	cgccccagg	480
gggogtggg	tttcccggg	tgggtgtggg	tttctctggg	gtgggtggg	ctgtgtggg	540
atcccccctgc	tgggtgtggc	agggattgae	ttttttcttc	aaacagattg	gaaacccggg	600
gtaacntgct	agttgggtga	actgggtggg	agacgcgac	tgctgggtact	actgtttctc	660
ctgggtgtta	aaagcagatg	gtgggtgagg	ttgattccat	gcccgtctgt	tttctgtga	720
agaagccatt	tggtctcagg	agcaagatgg	gcaagtgggt	cgccactgct	ttccctgctg	780
cagggggagg	ggcaagagca	acgtgggccc	ttctggagac	cacnacgact	cctctgtgaa	840
gacgtttggg	agcaagaggt	gcaagtgggt	ctggccactg	cttcccccgc	tgagggggag	900
cggcaagagg	aacgtggkcg	cttggggaga	ctacgatgac	agcgccctca	tggaacccag	960
gtaccacgct	crtggagaag	atctggacaa	gctccacaga	gctgocctgg	ggggtaaagt	1020
ccccagaaag	gatctcatcg	tcattgtcag	ggacacgtay	gtgaacaaga	rggacaagca	1080
aaagaggact	gctctacatc	tggtctctgc	caatgggaat	tcagaagtay	taaaactcgt	1140
gctggacaga	cgatgtccac	ttaatgtctc	tgcaacacaa	aagaggacag	ctctgacaaa	1200
ggcgttccaa	tgccagggaag	atgaatgtgc	gttaatgttg	ctggaacatg	gcactgtacc	1260
aaatattcca	gatgagtatg	gaataaccac	ttctacactat	gctgtctaca	atgaagataa	1320
attaatggcc	aaagcactgc	ttctataggg	tgctgatata	gaatcaaaaa	acaaggtata	1380
gatctactaa	ttttatcttc	aaaatactga	aatgcattca	ttttaacatt	gacgtgtgta	1440
agggccagtc	ttccgtattt	ggaagctcaa	gcataacttg	aatgaaaata	ttttgaaatg	1500
acctaattat	ctaagacttt	atcttaataa	ttgttatttt	caagaagca	ttagagggtg	1560
cagttttttt	tttttaaatg	caettctggg	aaatactttt	gttgaaaaaa	ctgaatttgt	1620
aaaaggtaat	acttaactat	tttcaatttt	ttccctctag	gatttttttc	ccctaattgaa	1680
tgtaagatgg	caaaatttgc	cctgaaatag	gttttacatg	aaaactccaa	gaaaagttaa	1740
acatgtttca	gtgaatagag	atcctgctcc	tttggcaagt	ttctaataaa	cagtaataga	1800
tacgggggtg	tgccgctgtc	agtggcaagg	tttaagatat	ttctgatctc	gtgcc	1855

<210> 372

<211> 1059

<212> DNA

<213> Homo sapien

<400> 372

gcaacgtggg	cactttctgga	gaccacaacg	actcctctgt	gaagacgctt	gggagcaaga	60
ggtgcaagtg	gtgtgtccca	ctgcttcccc	tgctgcaggg	gagcggcaag	agcaacgtgg	120
gogcttgrgg	agactmogat	gacagygcc	tcattggagcc	caggtaccac	gtccgtggag	180
aagatcttga	caagctccac	agagctgccc	tgggtggggtg	aagtcgccag	aaaggatctc	240
atcgtcatgc	tcaggggacac	tgaygtgaac	aagargggaca	agcaaaagag	gactgtctct	300
catctgggct	ctggcaatgg	gaattcagaa	gtagtataaac	tcattgctgga	cagacgatgt	360
caacttaattg	tccttgacaa	caaaaagagg	acagctctga	yaaaggccgt	acaatgccag	420
gaagatgaat	gtgctttaat	gttgctggaa	catggcactg	atccaaatat	tcagatggag	480
tatggaaata	ccactctcca	ctaygctrtc	tayaatgaag	ataaattaat	ggccaangca	540
ctgctcttat	aygggtgctga	tatcgaatca	aaaaacaagg	tatagatota	ctaattttat	600
cttcaaaata	ctgaatgca	ttcattttaa	cattgacgkg	tgtaaggggcc	agtcttccgt	660
atttgggaag	tcagacataa	cttgaatgaa	aatattcttg	aatgacctaa	ttatctaaga	720
ctttattttta	aatattgtta	ttttcaaaag	agcattagag	ggtacagttt	ttttttttta	780
aatgcacttc	tggtaaatac	ttttgttgaa	aacactgaat	tgtaaaagg	taatactfac	840
tatttttcaa	tttttccctc	ctaggatctt	tttcccttaa	tgaatgtaag	atggcaaaat	900
ttgcccgtga	atagggttta	catgaaaact	ccaaganaag	ttaaacctgt	ttcagtgaat	960
agagatccctg	ctcctttggc	aagttcccaa	aaaacagtaa	tagatacagag	gtgatggccc	1020
tgtaagtggtg	aaggttttaag	atatctctga	tctcgtgoc			1059

<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

acgggtgggtg aggttgatgc catgca

ctcttctg tgaagaagcc

1000 1000 1000 1000

aggagcaaga	tgggcaagt	gtgctgccc	tgttccccc	gctgcaggga	gagcggaag	120
agcaacgtgg	gcatttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcaag	180
atgggcaagt	ggtgccgcca	ctgcttcccc	tgtgcagggg	ggagtggcaa	gagcaacgtg	240
ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcagggaacaa	gatgggcaag	300
tgggtgctgcc	actgcttccc	ctgctgcagg	gggagcggca	agagcaagggt	ggcgcttgg	360
ggagactacg	atgacagtgc	cttcatggag	cccaggatcc	acgtccgtgg	agaagatctg	420
gacaagctcc	acagagctgc	ctgggtgggt	aaagtcccca	gaaaggatct	catctgcatg	480
ctcagggaaca	ctgacgtgaa	caagaaggac	aagcaaaaga	ggactgctct	acatctggcc	540
tctgccaatg	ggaattcaga	agtagtaaaa	ctcctgctgg	acagacgatg	tcaacttaat	600
gtccttgaca	acaaaaagag	garagctctg	ataaaggccg	tacaatgcca	ggaagatgaa	660
tgtgogttaa	tgttgcctgga	acatggcaat	gatccaaata	ttccagatga	gtatggaaat	720
accactctgc	actacgctat	ctataatgaa	gataaattaa	tggccaaagc	actgctctta	780
tatgggtgctg	atatogaate	aaaaaacaag	catggcctca	caccaatggt	acttgggtga	840
catgagcaaa	aacagcaagt	cgtagaattt	ttaactcaaga	aaaaagcgaa	tttaaatgca	900
ctggatagat	atggaaggac	tgtctcaca	cttgcgtgat	gttgtggatc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aatctcttct	gaaaacagca	atccagaaaa	tgtctcaaga	1140
accagaaata	aataa					1155

<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

BEST AVAILABLE COPY

<400> 374

atgggtggctg	agggtgattc	catgcoggt	gcctcttctg	tgaagaagcc	atttggctctc	60
aggagcaaga	tgggcaagt	gtgctgccc	tgttccccc	gctgcaggga	gagcggaag	120
agcaacgtgg	gcatttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcaag	180
atgggcaagt	ggtgccgcca	ctgcttcccc	tgtgcagggg	ggagtggcaa	gagcaacgtg	240
ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcagggaacaa	gatgggcaag	300
tgggtgctgcc	actgcttccc	ctgctgcagg	gggagcggca	agagcaagggt	ggcgcttgg	360
ggagactacg	atgacagtgc	cttcatggag	cccaggatcc	acgtccgtgg	agaagatctg	420
gacaagctcc	acagagctgc	ctgggtgggt	aaagtcccca	gaaaggatct	catcstratg	480
ctcagggaaca	ctgacgtgaa	caagaaggac	aagcaaaaga	ggactgctct	acatctggcc	540
tctgccaatg	ggaattcaga	agtagtaaaa	ctcctgctgg	acagacgatg	tcaacttaat	600
gtccttgaca	acaaaaagag	garagctctg	ataaaggccg	tacaatgcca	ggaagatgaa	660
tgtgogttaa	tgttgcctgga	acatggcaat	gatccaaata	ttccagatga	gtatggaaat	720
accactctgc	actacgctat	ctataatgaa	gataaattaa	tggccaaagc	actgctctta	780
tatgggtgctg	atatogaate	aaaaaacaag	catggcctca	caccaatggt	acttgggtga	840
catgagcaaa	aacagcaagt	cgtagaattt	ttaactcaaga	aaaaagcgaa	tttaaatgca	900
ctggatagat	atggaaggac	tgtctcaca	cttgcgtgat	gttgtggatc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aatctcttct	gaaaacagca	atccagaaaa	agacttaag	1140
ctgacatcag	aggagagtc	acaaagggtc	aaaggcagtg	aaaatagcca	gccagagaaa	1200
atgtctcaag	aaccagaaat	aaataaggat	ggtgatagag	agggtgaaga	agaaatgaag	1260
aagcatgaaa	gtaataatgt	gggattacta	gaaaacctga	ctaattggtg	cactgctggc	1320
aatgggtgata	atgattaat	tcttcaaaag	aagagcagaa	cacctgaaaa	tcagcaattt	1380
cttgacaacg	aaagtgaaga	gtatcacaga	atttggaat	tagtttctga	ctacaagaa	1440
	aaataactc	ttctgaaaac	agcaarccag	aacaagactt	aaagctgaca	1500
		g gcttggggc	agtgaat	ctagccaga	gctagaaat	1560
		gaaagctac	ggaagta	gttoggatt	cccagaaaa	1620
		aaatggt	gatgatg	attccctcc	aagggaagagc	1680
		ctgac	actcag	agagtatca	cagtgaagaa	1740
		tgtgaa	gaac	ctggaaatatt	acacgatgag	1800
		agatagaa	gtg	aaatgaattc	tgagctttct	1860
		acatcttg	cat	gtacgttgcg	ggaagaaat	

gccatgctaa gactggagct agacacaatg aaacatcaga gccagctaaa aaaaaa 1980
 aaaaaa 2000

<210> 375
 <211> 2040
 <212> DNA
 <213> Homo sapien

<400> 375
 atgggtggtg aggttgatc catgcegggt gctctttctg tgaagaagcc atttgggtctc 60
 agggagcaaga tgggcaagt gtgctgccgt tgcttccct gctgcaggga gagcggaag 120
 agcaacgtgg gcaattctgg agaccaagac gactctgcta tgaagacact caggagcaag 180
 atgggcaagt ggtgcccga ctgcttcccc tgctgcagg ggagtggaag gagcaacgtg 240
 ggcgctcttg gagaccagc cgaactctgct atgaagacac tcaggaacaa gatgggcaag 300
 tgggtgctgc actgcttccc ctgctgcagg gggagcggca agagcaaggt ggcgcttgg 360
 ggagactacg atgacagtgc ctcatggag ccaggtacc acgtcgtgg agaagatctg 420
 gacaagctcc acagagctgc ctgggtgggt aaagtcccc gaagagatct catcgctatg 480
 ctcaaggaca ctgacgtgaa caagaaggac aagcaaaaga ggaactgctc acatctggcc 540
 tctgccaatg ggaattcaga agtagtaaaa ctctgctgg acagacgatg tcaacttaac 600
 gtccctgaca acaaaaagag gacagctctg ataaaggccg tacaatgcca ggaagtga 660
 tgtgctttaa tggctgga acatggcact gatcccaata tccagatga gtaggaaat 720
 accactctgc actacgctat ctataatgaa gataaattaa tggccaaagc actgctctta 780
 tatggtgctg atatcgaatc aaaaaacaag catggcctca caccactgtt acttgggtga 840
 catgagcaaa aacagcaagt cgtgaatttt ttaatcaaga aaaaagcgaa tttaaatgca 900
 ctggatagat atggaaggac tgctctcata ctgctgtat gttgtggatc agcaagtata 960
 gtcagccttc tacttgagca aaatatgat gtatcttctc aagatctatc tggacagacg 1020
 gccagagagt atgctgttcc tagtcatcat catgtaattt gccagttact tctgactac 1080
 aaagaaaaac agatgctaaa aatctcttct gaaaacagca atccagcaaa agacttaag 1140
 ctgacatcag aggaagagtc acaaaagggtt aaaggcagtg aaatagcca gccagagaaa 1200
 atgtctcaag aaccagaatt aaataaggat ggtgatagag aggttgaaga agaaatgaag 1260
 aagcatgaaa gtaataatgt gggattacta gaaaacctga ctaatgggtg cactgctggc 1320
 aatgggtgata atggattaat tctcaaaag aagagcaga cactgaaa tcagcaattt 1380
 cctgacaacy aaagtgaaga gtatcacaga atttgcgaat tagtttctga ctacaagaa 1440
 aacagatgc caaataactc ttctgaaaac agcaaccag aacaagactt aaagctgaca 1500
 tcagaggaag agtcacaaag gcttgagggc agtgaaaatg gccagccaga gaaagatct 1560
 caagaaccag aataaataa gbatggtgat agagagctag aaatlttat ggctatcgaa 1620
 gaaatgaaga agcaggaag tactcatgtc ggattcccag aaacctgac taatggtgcc 1680
 actgctggca atggtgatga tggattaatt cctccaagga agagcagaac acctgaagc 1740
 cagcaatttc ctgacactga gaatgaagag tatcacagt aogaaacaaa tgatactcag 1800
 aagcaatttt gtgaagaaca gaacactgga atattcacg atgagattct gattcatgaa 1860
 gaaaagcaga tagaagtggt tgaaaaaatg aattctgagc tttctcttag ttgtaagaaa 1920
 gaaaaagaca tcttgcatga aaatagtaog ttgogggaag aaattgccat gctaaagactg 1980
 gagctagaca caatgaaca tcagagccag ctcaaaaaa aaaaaa 2040

<210> 376
 <211> 329
 <212> PRT
 <213> Homo sapien

<400> 376
 Met Asp Ile Val Ser Gly Ser His Pro Leu Trp Val Asp Ser Phe
 1 5 10 15
 Leu His Leu Ala Gly Ser Asp Leu Leu Ser Arg Ser Leu Met Ala Glu
 20 25 30
 Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
 35 40 45
 Leu Asp Gly Gln Gly lu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
 50 55 60

```

Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
65          70          75          80
Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
          85          90          95
Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
          100          105          110
His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
          115          120          125
Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
          130          135          140
Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
145          150          155          160
Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
          165          170          175
Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
          180          185          190
Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
          195          200          205
Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
210          215          220
Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
225          230          235          240
Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
          245          250          255
Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
          260          265          270
Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
          275          280          285
Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu
290          295          300
Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu
305          310          315          320
Ser Met Leu Phe Leu Val Ile Ile Met
          325

```

<210> 377

<211> 148

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(148)

<223> Xaa = Any Amino Acid

<400> 377

```

Met Thr Xaa Pro Ser Trp Ser Pro Gly Thr Thr Ser Val Glu Lys Ile
1          5          10          15
Trp Thr Ser Ser Thr Glu Leu Pro Trp Trp Gly Lys Val Pro Arg Lys
          20          25          30
Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys
          35          40          45
Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
          50          55          60
Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
65          70          75          80
Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
          85          90          95

```

Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
 100 105 120
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
 115 120 125
 Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser
 130 135 140
 Lys Asn Lys Val
 145

<210> 378
 <211> 1719
 <212> PRT
 <213> Homo sapien

<400> 378
 Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu In Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val

340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Asn Val Ser Arg Thr Arg Asn Lys
 370 375 380
 Pro Arg Thr His Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser
 385 390 395 400
 Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys
 405 410 415
 Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly
 420 425 430
 Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys
 435 440 445
 Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly
 450 455 460
 Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys
 465 470 475 480
 Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys
 485 490 495
 Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp
 500 505 510
 Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu
 515 520 525
 Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
 530 535 540
 Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
 545 550 555 560
 Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
 565 570 575
 Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
 580 585 590
 Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
 595 600 605
 Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
 610 615 620
 Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
 625 630 635 640
 Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
 645 650 655
 Asn Lys His Gly Leu Thr Pro Leu Leu Gly Val His Glu Gln Lys
 660 665 670
 Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
 675 680 685
 Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
 690 695 700
 Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser
 705 710 715 720
 Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
 725 730 735
 His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
 740 745 750
 Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys
 755 760 765
 Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
 770 775 780
 Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
 785 790 795 800
 Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly

805 810 915
 Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn
 820 825 830
 Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe
 835 840 845
 Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser
 850 855 860
 Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn
 865 870 875 880
 Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu
 885 890 895
 Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile
 900 905 910
 Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn
 915 920 925
 Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro
 930 935 940
 Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu
 945 950 955 960
 Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe
 965 970 975
 Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His
 980 985 990
 Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser
 995 1000 1005
 Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu
 1010 1015 1020
 Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His
 1025 1030 1035 1040
 Gln Ser Gln Leu Pro Arg Thr His Met Val Val Glu Val Asp Ser Met
 1045 1050 1055
 Pro Ala Ala Ser Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met
 1060 1065 1070
 Gly Lys Trp Cys Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys
 1075 1080 1085
 Ser Asn Val Gly Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr
 1090 1095 1100
 Leu Arg Ser Lys Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys
 1105 1110 1115 1120
 Arg Gly Ser Gly Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp
 1125 1130 1135
 Ser Ala Met Lys Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His
 1140 1145 1150
 Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp
 1155 1160 1165
 Gly Asp Tyr Asp Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg
 1170 1175 1180
 Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val
 1185 1190 1195 1200
 Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys
 1205 1210 1215
 Lys Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly
 1220 1225 1230
 Asn Ser Glu Val Val Lys Leu Leu Asp Arg Arg Cys Gln Leu Asn
 1235 1240 1245
 Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys
 1250 1255 1260
 Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro

1265 1270 1275 1280
 Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr
 1285 1290 1295
 Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp
 1300 1305 1310
 Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val
 1315 1320 1325
 His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala
 1330 1335 1340
 Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala
 1345 1350 1355 1360
 Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn
 1365 1370 1375
 Ile Asp Val Ser Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr
 1380 1385 1390
 Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr
 1395 1400 1405
 Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 1440
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 1520
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 1600
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 1680
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379
 <211> 656
 <212> PRT
 <213> Homo sapien

<400> 379

Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys
1				5					10					15	
Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe
			20					25					30		
Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp
		35					40					45			
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp
	50					55					60				
Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val
65				70					75					80	
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn
			85					90						95	
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser
		100						105					110		
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe
		115					120					125			
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His
	130					135					140				
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met
145				150						155				160	
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala
			165						170					175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu
		180					185						190		
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr
	195					200						205			
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met
	210					215					220				
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn
225				230					235					240	
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys
			245						250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly
		260					265						270		
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val
		275				280						285			
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr
	290					295					300				
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile
	305				310					315				320	
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu
		325							330					335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val
		340					345						350		
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile
	355					360						365			
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu
	370					375						380			
Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser	Gln	Pro	Glu	Lys
385				390						395				400	
Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp	Arg	Glu	Val	Glu
			405						410					415	

Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys
 515 520 525
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly
 530 535 540
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser
 545 550 555 560
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr
 565 570 575
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln
 580 585 590
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln
 595 600 605
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys
 610 615 620
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile
 625 630 635 640
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 645 650 655

<210> 380

<211> 671

<212> PRT

<213> Homo sapien

<400> 380

Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala

165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Lys Arg Ser Gln Glu Pro Glu Ile Asn Lys Asp
 515 520 525
 Gly Asp Arg Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys Lys
 530 535 540
 His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly Ala
 545 550 555 560
 Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser Arg
 565 570 575
 Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr His
 580 585 590
 Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln Asn
 595 600 605
 Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln Ile
 610 615 620
 Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys Lys


```

tttactaagt tttcagactg gcaggaagtc aaacctatta ggctgaggac cttgtggagt 2100
gtagctgatac cagctgatat aggaactagc cagggtggggg cctttccctt tggatggggg 2160
gcataatcga cagttattct ctccaagtgg agacttaagg acagcatata attctccctg 2220
caaggatgta tgataatat taaaaagtaa ttccaactga ggaagctcac ctgaccccta 2280
gtgtccaggg tttttactgg gggctctgtg gacgagtatg gactacttga ataattgacc 2340
tgaagtcttc agacctgagg ttccctagag ttcaaacaga tacagcatgg tccagagtcc 2400
cagatgtaca aaaacagggg ttcattcaca atcccatctt tagcatgaag ggtctggcat 2460
ggcccaaggc cccaagtata tcaaggcact tgggcagaac atgccaagga atcaaatgtc 2520
atctcccagg agttattcaa ggggtgagcc cttacttggg atgtacaggc tctgagcagt 2580
gcagggtctg tgagtcaacc ttttattgtc caggggatga gggaaaagga gaggatgagg 2640
aagcccccct ggggatttgg tttggtcttg tgatcagggt gtctatgggg ctatccctac 2700
aaagaagaat ccagaaatag gggccacttg aggaatgata ctgagcccaa agagcattoa 2760
atcattgttt tatttgctt cttttcacac cattggtgag ggagggatta craccctggg 2820
gttatgaaga tgggtgaaca cccacacat agcaccggag atatgagatc aacagtttct 2880
tagccataga gattcacagc ccagagcagg aggacgctgc acaccatgca ggatgacatg 2940
ggggatgccc tgggatttgg tgtgaagaag caaggactgt tagaggcagg ctttatagta 3000
acaagacggg ggggcaact ctgatttccg tgggggaatg tcatggtctt gctttactaa 3060
gttttgagac tggcaggtag tgaactcat taggctgaga acctgttggg atgcagctga 3120
cccagctgat agaggaagta gccaggtggg agcctttccc agtgggtgtg ggacatatct 3180
ggcaagattt tgtggcactc ctggttacag atactggggc agcaaatcaa actgaatrtt 3240
gttttcagac cttaaaaaaa aaaaaaaa aaaagtttt 3279

```

<210> 383

<211> 154

<212> PRT

<213> Homo sapiens

<400> 383

```

Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
      5                                10                                15

```

```

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20                                25                                30

```

```

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35                                40                                45

```

```

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50                                55                                60

```

```

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65                                70                                75                                80

```

```

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
      85                                90                                95

```

```

Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
     100                                105                                110

```

```

Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
     115                                120                                125

```

```

Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
     130                                135                                140

```

```

Ala Leu Glu Arg Gly His Leu Val Arg Glu
     145                                150

```

<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

<400> 384
 ggatcctcta gagcggcgc ctactactac kaatttcgcy gccgcgtcga cgaagaagag 60
 aaagatgtgt tttgttttgg actctctgtg gtcccttcca atgetgtggg tttccaaaca 120
 ggggaagggc ccccttttgc ttgccaagtg ccataacoat gagcactact ctaccatggg 180
 tctgcctcct ggccaagcag gctgggttgc aagaatgaaa tgaatgattc tacagctagg 240
 acttaacctt gaaatggaaa gtcttgcaat cccatttgcg ggatccgtct gtgcacatgc 300
 ctctgtagag agcagcattc ccaggagcct tggaaacagt tggcactgta aggtgcttgc 360
 tcccaagagc acatcctaaa aggtgtgtga atggtgaaaa cgtcttcctt ctttatttgc 420
 ccttcttatt tatgtgaaca actgtttgtc tttttttgta ttttttttaa actgtaaagt 480
 tcaattgtga aatgaatat catgcaata aattctgcga ttttttttcc aaagtaaaaa 540
 aaaaaaaaaa aaaaaaa 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
 tcccaggtg atgtgcgagg gaagacacat ttactatcct tgatggggct gattccttta 60
 gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120
 tctcaaagcc atctgctgtc ttogagtacg gacacatcat cactcctgca ttgttgatca 180
 aacgttggag gtgcttttcc tcaagtaaga agcctttagc aaaagctoga atagacttag 240
 taccagacag gtccagtttc cgcaccaaca cctgtctggt cctgtctgtg gtctggatct 300
 ctttggccac caattccccc ttttccacat cccggca 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
 gggcccgcta ccggcccagg ccccgccctg cgagtcctcc tcccggggtg cctgcccga 60
 gccgcctcgg cccagagggt gggcgccggg ctgcctctac cggctggcgg ctgtaactca 120
 gcgaccttgg cccgaaggct ctagcaagga cccaccgacc ccagccggcg cggcggcggr 180
 ggggaactttg cccggtgtgt gggcgggagc ggactgcgtg tccgcggaag ggcagcgaag 240
 atgttagcct tgcctgcccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387
 gggcccgagt gggcaccag ggactctttg caggcttctc tctcgggato atcaaggctg 60
 cccctcctctg tgccatcatg atcagacat atgagttcgg caaaagcttc ttccagaggg 120
 tgaaccagga ccggtctctg ggcggtgaa aggggcaagg aggcaggac cccgtctctc 180
 ccaoggatgg ggagaggga ggaggagac cagccaagtg ccttttctc agcactgagg 240
 gaggggggtt gtctcccttc cctcccggcg caaagctcca gggcagggt gtccctctgg 300
 gcggccagc acttctcag acacaaactc tctctgtcgc tccagtcgtg gggatcacta 360
 cttaaccacc ccccaagttc aagaccaaat cttccagctg ccccttctgt gtttccctgt 420
 gtttgcgtga gctgggcatg tctccaggaa caaagaagcc ctcagcctgg tgtagctctc 480
 ctgacccctg ttaattcctt agtctaaaag atgatgaact tcaaaaaaaa aaaaaaa 537

<210> 388
 <211> 520
 <212> DNA
 <213> Homo sapiens

<400> 388
 aggataattt ttaaaccaat caaatgaaa aaacaaacaa acaaaaaagg aaatgtcatg 60
 tgagggttaaa ccagtttgca ttcccttaat gtggaaaaag taaggaggact actcagcact 120
 gtttgagat tgcctcttct acagcttctg agaatttgtt tatttcactt gccagtgaa 180
 ggacccctc cccaacatgc cccagccac cctaagcat ggtcccttct caccaggcaa 240
 ccaggaaact gctacttggt gacctcaca gagaccagga gggtttggt agctcacagg 300
 acttccccca cccagaaga ttagcatccc atactagact catactcaac tcaactagga 360
 tcatactcaa ttgatggtta ttagacaatt ccatttcttt ctggttatta taaacagaaa 420
 ctcttctctc ttctcattac cagtaaagga tcttggtatc tttctgttg aatgatttct 480
 atgaacttgt cttattttaa tgggtgggtt ttttctggt 520

<210> 389
 <211> 365
 <212> DNA
 <213> Homo sapiens

<400> 389
 cgttgcccc gtttgacaga aggaaggcg gagcttattc aaagtctaga gggagtggag 60
 gaggtaaggc tggatttcag atctgectgg ttccagcgc agtgtgccc ctgctcccc 120
 aacgacttcc caaatatct caccagcgc ttccagctca ggcgtctag aagcgtcttg 180
 aagcctatgg ccagctgtct ttgtgttccc tctacccgc ctgtctcac agctgagact 240
 cccaggaaac cttcagacta ccttctctg ccttcagcaa gggcggttc ccacattctc 300
 tgagggtcag tggagaacc tagactccca ttgctagag tagaaaggg aagggtgctg 360
 gggag 365

<210> 390
 <211> 221
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> [1]... (221)
 <223> n = A,T,C or G

<400> 390
 tgctctcca tcttgcccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
 tacaagntt ctcattgggt tggaaacatc ctgcttgagg ttccaggaag gcctctggt 120
 gctctangag tctgancga ntcgttgcc cantctgaca naaggaaagg cggagcttat 180
 tcaaagtcta gagggagtgg aggagttaag gctggatttc a 221

<210> 391
 <211> 325
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> [1]... (325)
 <223> n = A,T,C or G

<400> 391

```

tggagcaggt cccgagggct ccctagagcc tggggccgac tctgtgncga tgcangcttt 60
ctctcgccgc cagcctggag ctgctcctgg catctacca caatcagnog aggcgagcag 120
tagccagggc actgctgcca acagccagtc cnnataccat catgtnaccc ggtgngctct 180
naanttingat ntccanagcc ctaccoatcn tagttctgct cccccaccg ntaccagccc 240
cactgcccag gaactctaca gccagtaacc tgcctcgagc tctctaceta ccagtaagat 300
gagacctcgg gctactacta tgacc                                     325

```

```

<210> 392
<211> 277
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(277)
<223> n = A,T,C or G

```

```

<400> 392
atattgttta actccttctt ttatatcttt taacattttt atggngaaag gttcacatct 60
agttctactt ngscnagngn ctctactctg agtctcttc ccggcctggn ccagtingnaa 120
antaccanga accgncatgn cttanaaacn nccctggttn tgggttnntc aatgactgca 180
tgcagtgcac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggccc 240
ctgaggatcc agcgcrcygt cctgtgttgc tggggaa                                     277

```

```

<210> 393
<211> 566
<212> DNA
<213> Homo sapiens

```

```

<400> 393
actagtccag tctggtggaa ttgcggcccg ogtcgacgga caggtcagct gtctggctca 60
gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga ttaaattcag cctaaacgtt 120
tgcgcgggaa cactgcagag acatgctgtg gactttccaa ccttagcccc tctgcgggca 180
gagaaggtct agtttthcca tcagcattat catgatata ggactggcta cttggttaag 240
gaggggtcta ggagatctgt cccctttaga gacaccttac ttataatgaa gtatttgga 300
gggtggtttt caaaagttag aatgtctgtt attccgatga tcatcctgta aacattttat 360
catttattaa tcatcctgct ctgtgtctat tatttatatt atatctctac gctggaaact 420
ttctgctca atgtttactg tgcctttgtt ttgcttagtt tgtgttggtg aaaaaaaaaa 480
cattctctgc ctgagtttta atttttgtcc aaagttattt caatctatcc aattaaaagc 540
ttttgctat caaaaaaaaa aaaaaa                                     566

```

```

<210> 394
<211> 384
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(384)
<223> n = A,T,C or G

```

```

<400> 394
gaacatacat gtcccggcac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60
tgcaaatng gaccgggcca aggctggact gctggagcgt gtgaaggagc tacaggccna 120
gcaggaggac ogggctttaa ggagttctaa gctgagtgto actgtagacc ccaaatacca 180
tcccagact atcggagaa agggggcagt aattaccaa atcgggttgg agcatgacgt 240
gascctccag tttctgata aggacgatgg gaaacagccc caggacccaa ttaccatcac 300
agggtacgaa aagaacacag aagctgccag ggtatctata ctgagaattg tgggtgaact 360

```

tgagcagatg gtttctgagg acgt

384

<210> 395

<211> 399

<212> DNA

<213> Homo sapiens

<400> 395

ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgc 60
tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcattcttg cggaaattgt ggagtcctaa gaaatcatgg cctctgaagt 180
attcagctct ttcagtagcc ctgagttctc tatagagttg cctaaccacag gcagaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
caagttctct ttggaaagcc tgggcatctc ctractacag acctctgacc atgggacggt 360
gcagcctggt gagaccatcc aatcccaaat aaatgcac 395

<210> 396

<211> 403

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(403)

<223> n = A,T,C or G

<400> 396

tggagttntc agtgcaaaac agccataaag cttcagtagc aaattactgt ctcacagaaa 60
gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaggagtt gttagtagat 180
actaaaaaaa gtggatgaat aatctggata ttttccctaa aaagattcct tgaaacacat 240
taggaaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gttttagggga gggagtgagg gataaaagaa ggaaaaaag aagagtgaga aaacctattt 360
atcaaagcag gtgctatcac tcaatgttag gccctgctct ttt 403

<210> 397

<211> 100

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(100)

<223> n = A,T,C or G

<400> 397

actagtnacg tctggtggaa ttgcggcgg cgtcgacctc naanccatct ctatagcaaa 60
tccatcccg ctcctggttg gtnacagaat gactgacaaa 100

<210> 398

<211> 278

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 398

```

gogggcogcgt cgacagcagc tccgccagcg ctcccccctg ggtggggatg tgctgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaagag cggacttcac ctggggcgat 120
tcaactctgt gccctcgacca gtgaggagag ctggaccgac agcggagtggt actcatcatg 180
ctccggggcag cccatccacc tgtggcagtt cctcaaggag ttgctactca agcccccacg 240
ctatggccgc ttcattangt ggctcaacaa ggagaagg 278

```

<210> 399

<211> 298

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(298)

<223> n = A,T,C or G

<400> 399

```

acggaggttg aggaagcgnc cctgggagcg anaggatggg tccgncatt gaccncctcn 60
ggggtgccng catggagcgc atggggcgcg gcccgggcca cggcatggat cgcgtgggt 120
ccgagatcga gcgcattggg ctggctcatgg accgcatggg ctccgtggag cgcattgggt 180
ccggcattga gcgcattggg ccgctggggc tcgaccacat ggctccanc attgancgca 240
tgggccagac catggagcgc attggctctg gcgtggagcn catgggtgoc ggcattggg 298

```

<210> 400

<211> 548

<212> DNA

<213> Homo sapiens

<400> 400

```

acatcaacta ctctctcatt ttaaggtatg gcagttccct tcatccccc ttcctgcctt 60
gtacatgtac atgtatgaaa ttctctctc ttaccgaact ctctccacac atcaccaagg 120
caaaagaacca cagctttaga agggtaagag ggcacccat gaaatgaaat ggtgatctct 180
tgagtctctt ttttccacgt ttaaggggoc atggcaggac ttagagttgc gaggtaagac 240
tgcagagggc tagagaatta ttccatacag gccttgaggc caccatgtc acttatccg 300
tataccctct caccatccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gttggcccc taattctggg ccttctgtgt ttgttttaac tacttgggca tcccggaag 420
ctttccagtg atctcctacc atggggcccc ctcttgggat caagcccctc ccaggccctg 480
tccccagccc ctctgcccc agcccaccg ctctgcttgg tgctcagccc tccattggg 540
agcagggt 548

```

<210> 401

<211> 355

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(355)

<223> n = A,T,C or G

<400> 401

```

actgtttcca tgttatgttt ctacacattg ctacctcagt gctcctggaa acttagcttt 60
tgatgtctcc aagtagtcca ccttcattta accctttgaa actgtatcat ctttgccaag 120
taagagtggg gccctatttc agctgcttbg acaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgtgaag caaagtgcgc atggtggcgg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnggg ttccaacca ggggaagggt 300

```


ccctttttgca ttgccaagtg ccataaccat gagcactact ctaccatggn tctgc 355

<210> 402

<211> 407

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(407)

<223> n = A,T,C or G

<400> 402

atggggcaag ctgggataaag aaccaagacc cactgggagta tctgtctcttc aagaaccaca 60
tctcacatgc ggtggcctac ataggctcaa aataaaggaa tggagaaaaa tatttcaagc 120
aatggaaaaa cagaaaaaag cagggtgttc actoctactt tctgacaaaa cagactatgc 180
gaataaagat aaaaaagaga aggcattac aaaggtggtc ctgacctttg ataaatctca 240
ttgcttgata ccaacctggg ctgttttaat tgcctaaacc aaaaggataa tttgctgagg 300
ttgtggagct tctccctgc agagagtccc tgatctccca aaatttggtt gagatgtaag 360
gntgattttg ctgacaactc cttttctgaa gttttactca tttccaa 407

<210> 403

<211> 303

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(303)

<223> n = A,T,C or G

<400> 403

cagtatttat agcnaactg aaagctagt aycaggcaag tctcaaatcc aggcaccaca 60
tcttaagcaa gagccctggc atggtgaaaa tgcataaagg gagtctggcc aatctacaaa 120
tagagaacaa gacctactca gtcattgaaca aaaggcaga caccacatg gatctcatgg 180
gggattggat attgtaatta tagagcagga agatgacagt gatcgtcatt tggcacaaca 240
tcttaacaa caccgaaacc cattatttac ataaccctcc attcggtaac catgttgaaa 300
gga 303

<210> 404

<211> 225

<212> DNA

<213> Homo sapiens

<400> 404

aagtgttaact tttaaaaatt tagtggattt tgaaaattct tagaggaaag taaaggaaaa 60
attgttaatg cactcattta cctttacatg gtgaaagttc tctcttgatc ctacaaacag 120
acattttcca ctggtgtttc catagtgtt aagtgtatca gatgtgttgg gcatgtgaat 180
ctccaagtgc ctgtgttaata aataaagtat ctttatttca ttcat 225

<210> 405

<211> 334

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(334)

<223> n = A,T,C or G

<400> 405

```
gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgaggggtg tctggaggac 60
ttcaatacac ctcccccat agtgaatcag ctccaggggg gtccagtcce tctcttact 120
tcctcccat cccatgcraa aggaagaccc tccctccttg gtcacagcc tctcttaggc 180
tcccagtg ctcaggaca gagtgggta tgttttcagc tccatccttg ctgtgagtgt 240
ctggtgaggt tgtgcctcca gcttctgtc agtgcctcat ggacagtgt cagcccatgt 300
cactctcac tctctcann tggatccac cctt 334
```

<210> 406

<211> 216

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(216)

<223> n = A,T,C or G

<400> 406

```
tttcatacct-aatgagggag-ttganatnac atnaaccag gaattgcatt gatctcaag 60
gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttgct 120
acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaagaca 180
actgccaaag aatnttcaag aaggaggact gccant 216
```

<210> 407

<211> 413

<212> DNA

<213> Homo sapiens

<400> 407

```
gctgacttgc tagtatrato tgcattcatt gaagcacaag aacttcattg ctgactcat 60
gtaatgcaa taggatraaa aataaattt gatatacat ggaacagac aaaaaatatt 120
gtacaacatt gcaccagtg tcagattcta cactggcca ctccaggaagc aagagttaat 180
cccagaggtc tatgtcctaa tgtgttatgg caaatggatg tcattgcagt accttcattt 240
ggaaaattgt catttgtcca tgtgacagtt gatacttatt cactttcat atgggcaacc 300
tgcagacag gagaaggtt tcccatgtta aaagacattt attatcttgt tttcctgtca 360
tgggagtcc agaaaagt taaaacagaca atgggcagg ttctgtagta aag 413
```

<210> 408

<211> 183

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(183)

<223> n = A,T,C or G

<400> 408

```
ggagctngcc ctcaattect ccatntctat gttancatat ttaattgttt ttgnattaa 60
tnttaacta gttaatcctt aaagggtan ntaatcctta actagtcctt ccattgtgag 120
cattatectt ccagtatton ccttctntt tabttactcc ttcctggcta cccatgtact 180
ntt 183
```

<210> 409

<211> 250

14]

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(250)
<223> n = A,T,C or G

<400> 409
cccacgcacg ataagctctt tcttctctga agtccctgctt ggaatcctc aaatctgacg 60
gtggttttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccata 120
gtccctcctt caacaacata ggaggatcct ccccttcttt ctgctcacgg ccttatctag 180
gcttcccagt gccccagga cagcgtgggc tatgtttaca gcgctcctt gctggggggg 240
ggccttatgc 250

<210> 410
<211> 306
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

<400> 410
ggctggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
agtcttgcaa tcccatattg aggatccgtc tgtgcacatg cctctgtaga gagcagcatt 120
cccagggaac ttggaacag ttggcactgt aggtgtctt ctccccaga cacatcctaa 180
aagggtgttg aatggtgaaa accgcttctt tctttattgc cccttcttat ttatgtgaac 240
nactggttgg ctttttttgn atctttttta aactggaaag ttcaattgng aaaatgaata 300
tcttgc 306

<210> 411
<211> 261
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 411
agagataatn cttaggtnaa agttcataga gtcccatga actatatgac tggccacaca 60
ggatcttttg catttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaatgtc tgaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa gngaggcaa a 261

<210> 412
<211> 241
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(241)

<223> n = A,T,C or G

<400> 413

```
gttcaatggt acctgacatt tctacaacac cccactcacc gatgtattcg ttgccacgtg 60
ggaacatacc agcctgaatt tggaaaaaat aattgtgttt ctgcccagg aaatactacg 120
actgactttg atggctccac aaacataacc cagtgtaaa acagaagatg tggaggggag 180
ctgggagatt tcactgggta cattgaattc ccaactacc cangcaatta ccagccaac 240
a 241
```

<210> 413

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> [1]...[231]

<223> n = A,T,C or G

<400> 413

```
aactcttaca atccaagtga ctcatctgtg tgcctgaatc ctttccactg tctcatctcc 60
ctcatccaag ttctcagtar cttctctttg ttgtgaagg taatcaact gaacaacaaa 120
aagtttaact tctcatttg gaacctaaaa actctcttct tctgggtct gagggtcca 180
agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t 231
```

<210> 414

<211> 234

<212> DNA

<213> Homo sapiens

<400> 414

```
actgtccatg aagcactgag cagaagctgg aggcacacag caccagacac tccaggaag 60
gatggagctg aaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaag gaggagggtt cttcctttgg catgggatgg ggatgaagta aggagagga 180
ctggaccccc tgggaagctga ttcaactatgg ggggagggtt attgaagtc tcca 234
```

<210> 415

<211> 217

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> [1]...[217]

<223> n = A,T,C or G

<400> 415

```
gcataaggatt aagactgagt atcttttcta cattcttta actttctaa gggcacttct 60
caaaacacag accaggtage aaatctccac tgcctcaagg ntctaccac caatttctca 120
cacctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc 217
```

<210> 416

<211> 213

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
 <222> {1}...{213}
 <223> n = A,T,C or G

<400> 416
 atgcataatnt aaagganact gcctcgcttc tagaagacat ctggnetget ctctgcata 60
 ggcacagcag taaagctctt tgattcccag aatcaagaac tctccccttc agactattac 120
 ogaatgcaag gtggtttaatt gaaggccact aattgatget caaatagaag gatattgact 180
 atattggaac agatggagtc tctactacaa aag 213

<210> 417
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{303}
 <223> n = A,T,C or G

<400> 417
 nagtcttcag gccatccagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60
 gtgggaaagg ctttactctg agttcaaato tccaagccca tcagagagtc cacactggag 120
 agaagccata caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
 ttcattctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt gggaggggct 240
 tcantrcaag ttcgtatctt caaatccato ngaaggncca cagtatanan aaacctttta 300
 agt 303

<210> 418
 <211> 328
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{328}
 <223> n = A,T,C or G

<400> 418
 tttttggcgg tgggtggggca gggacggggac angagtetca ctctgttgcc caggctggag 60
 tgcacagggca tgatctcgcc tcaactaac cctgcctcc catgtccaag cgattcttgt 120
 gcctcagcct tccctgtagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
 gtatttttag tagagacagg gtttcacrat gttggccagg ctgggtctcaa actcctnacc 240
 teagnggtca ggtgtgtctc aaactcctga cctcaagtga tctgccacc tcagcctccc 300
 aaagtgcctan gattacagge cgtgagcc 328

<210> 419
 <211> 389
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{389}
 <223> n = A,T,C or G

<400> 419
 cctctcaag aaggcctgtg gtccgcctcc cggcaaccaa gaagcctgca gtcccatatg 60

```

acctctgagc catggactgg agcctgaaag gcagcgtaaa ccttgcctct gatcttgetg 120
cttgtttctct ctctgtggct ccattcatag cacagttggt gcaactgaggc ttgtgcaggc 180
cgagcaaggc caagctggct caaagagcaa ccagtcacct ctgccacggt gtgccaggca 240
cgggttctcc agccaccaac ctcaactcgt ccgcgaaatg gcacatcagt tcttctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
tggcagccac tcnnggctgtg tggacgctg 389

```

<210> 420

<211> 408

<212> DNA

<213> Homo sapiens

<400> 420

```

gttctctcta actcctgcca gaaacagctc tctcaacat gagagctgca cccctctctc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttctc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gttctggcat ggagaccgaa 180
gtccatttga cacttttccc actgacccca taagggaatc ctcatggcca caaggatttg 240
gccaaactca ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgcctatg acaaacctgg caagcccg 408

```

<210> 421

<211> 352

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1} ... (352)

<223> n = A,T,C or G

<400> 421

```

gtcacaatat ctttttactg atnngcatgg ctacacaatc attgactatt acggaggcca 60
gaggagaatg aggcctggcc tgggagccct gtgootacta naagcacatt agattatcca 120
ttcaactgaa gaacagggtct tttttgggct cttcttctcc accacnatac acttgcaagtc 180
ctccttcttg aagattcttt ggcagttgct tttgtcataa ccacacagggt tagaaacaag 240
ggtgcaacat gaaatttctg ttctgtagca agtgcatgct tcacaagttg gcangtctgc 300
cactccaggt ttattgggtg tttgtttctt ttgagatcca tgcatttctt gg 352

```

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

```

atgccaccat gctggcaatg cggcgggcgg tggaaaggct gcatatccag cccaagctgg 60
cgatgatcga cggcaaccgt tggcgaagt tggcgatgac agccgaagcg gtggtcaagg 120
gcgatagcaa ggtgcggcg atcgcgcggt cgtcaatcct ggccaaggct agccgtgate 180
gtgaatggc agctgtcgaa ttgatctacc cgggttatgg catcgcggg cataagggtct 240
atrcgacacc ggtgcacctg gaagccttgc agcggtctgg gcggaogccg attcacogac 300
gcttcttccg ccggtatggc tggcctatga aaattat 337

```

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(310)
<223> n - A,T,C or G

<400> 423

```
gtcaaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60
aggagaatga ggcctggcct gggagccctg bccctactan aagcncatta gattatccat 120
tcactgacag aacaggctct ttttgggtcc ttctctccca ccacgatata cttgcagtc 180
tccttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
gtgcaacatg aaatttctgt ttctgtagca gtgcatgtct cacagttgtc aagcttgccc 300
tcagagttta                                     310
```

<210> 424
<211> 370
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(370)
<223> n - A,T,C or G

<400> 424

```
gtcaaaaaat ctttttactg ataggcatg ctacacaatc attgactatt agaggccaga 60
ggagaatgag gcctggcctg ggagccctgt gctactatga agcacattag attatccatt 120
cactgacaga acaggctctt tttgggtcct tcttctccac caccgatata ttgcagtcct 180
ccttcttgaa gattctcttg cagttgtctt tgtcataacc cacaggtgta gaaacatcct 240
ggttgaatct cctgggaact cctcattagg tatgaaatag catgatgat tgcataaagt 300
cacgaagggt gcaagatca caacgtgccc cagganaaca ttcatgtga taagcaggac 360
tccgtcgaag                                     370
```

<210> 425
<211> 216
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(216)
<223> n - A,T,C or G

<400> 425

```
aattgctatn ntltattttg cactcctaaa taattaccaa aaaaaaaaaa tnttaaatga 60
taacaarnca acatcaaggn aaananaaca ggaatggntg actntgcata aatnggccga 120
anattatoca ttatnttaag ggttgacttc aggnatcaga acacagacaa acatgccccag 180
gaggnnttca ggaagctcgt atgtntnttg aggaagg                                     216
```

<210> 426
<211> 596
<212> DNA
<213> Homo sapiens

<400> 426

```
cttccagtga ggataaccct gttgcccggg gccgagggtt tccattaggg tctgattgat 60
tggcagtcag tgatgggaagg gtgttctgat catccgact gccccaaggg tcgctggcca 120
gtctcttggt ttgctgagct ggcagtagga cctaatttgt taattaagag tagatgggtga 180
gctgtccttg tattttgatt aacctaatgg ccttccracc acgactcgga ttcagctgga 240
gacatcaagg caacttttaa tgaantgatt tgaaggggca ttaaggagga cttccogtta 300
```

```

ctaggcagtt catctgcact gataacttct tggcagctga gctggctcga gctgtggccc 360
aaacgcacac ttggtttttg gttttgagat acaactotta atcttttagt catgcttgag 420
ggtggatggc cttttcagct ttaacccaat ttgcactgcc ttggaagtgt agccaggaga 480
atacactcat atactcgtgg gcttagaggg cacagcagat gtcattggtc tactgootga 540
gtcccgctgg tcccatccca ggaccttcca tgggcgagta cctgggagcc cgtgct 596

```

<210> 427

<211> 107

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (107)

<223> n = A,T,C or G

<400> 427

```

gaagaattca agttagggtt attcaaaggg cttaacgaga atcttanacc caggnoccag 60
cccgggagca gccttanaga gctcctgttt gactgccegg ctcagng 107

```

<210> 428

<211> 38

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (38)

<223> n = A,T,C or G

<400> 428

```

gaacttccna anaangactt tattcaactat ttacatt 38

```

<210> 429

<211> 544

<212> DNA

<213> Homo sapiens

<400> 429

```

ctttgctgga oggaataaaa gtggaogcaa gcatgaccto ctgatgaggg cgtgtcattt 60
attgaagagc ggtgcagcc ctgcgggtta gattaaaatc cgagaattgt atagagcgcg 120
atatccacga actcttgaag gactttctga tttatccaca atcaaatcat cggttttcag 180
tttggatggt ggtcactcac ctgtagaacc tgacttggcc gtggctggaa tccactcgtt 240
gccttcactc tcagttacac ctcactcacc atctctctct gttggtctct tgcctcttca 300
agatactcag cccacatttg agatgcagca gccatctccc ccaattctct ctgtccatcc 360
tgatgtgcag ttaaaaaatc tgccttttta tgatgtcctt gatgttctca tcaagcccac 420
gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttattt ttgctttgac 480
acctcaacaa gtttagagaga tatgcataat cagggatttt ttgccaggtg gtaggagaga 540
ttat 544

```

<210> 430

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (507)

<223> n = A,T,C or G

<400> 430

```

cttatcncaa tggggctccc aaacttggct gtgcagtgga aactcgggg gaattttgaa 60
gaacactgac aaccatcttc caccocgaca ctctgattta attgggctgc agtgagaaca 120
gagcatcaat ttaaaaagct gccacgaatg ttntcctggg cagcgttgty atctttgccc 180
ccttcgtgac tttatgcaat gcacatgct atttcatacc taatgagggg gttccaggag 240
attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntc 300
caagaaggag gactgcaagt atatcgtggt ggagaagaag gacccaasaa agacctgttc 360
tgtcagtgaa tggctaatct aatgtgcttc tagtaggcac agggctccca ggccaggcct 420
cattctctc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480
ttttgagcaa aaaaaaaa aaaaaaa

```

507

<210> 431

<211> 392

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 431

```

gaaaattcag aatggataaa aacaaatgaa gtacaaaata ttccagattt acatagcgat 60
aaacaagaaa gcacttatca ggaggactta caaatggaag taractctan aaccatcctc 120
tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
aagagatggg aaacaaaato ccaggagttt tgtgtgtgga gtccctgggt ttccaacaga 240
catcattcca gcattctgag attagggnga ttggggctca ttctggagtt ggaatgttc 300
acaaaagtga tgttgttagg taaaatgtac aacttctgga tctatgcaga cattgaaggc 360
gcaatgagtc tggcttttac tctgctgttt ct

```

392

<210> 432

<211> 387

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(387)

<223> n = A,T,C or G

<400> 432

```

ggtatccnta cataatcaaa tatagctgta gtacatgttt teattggngt agattaccac 60
aaatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120
ngtagtccaa gctctcgga gtccagccac tgnгааacat gctcccttta gattaacctc 180
gtggacnctn ttgttgnaat gtctgaactg tagngccctg tattttgctt ctgtctgnga 240
attctgttgc ttctggggca ttcccttgng atgcagagga ccaccacaca gatgacagca 300
atctgaattg ntccaatcac agctgogatt aagacatact gaaatcgtac aggacogggg 360
acaacgtata gaacactgga gtccctt

```

387

<210> 433

<211> 381

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (281)

<223> n = A, T, C or G

<400> 433

```

ttcaactagc anagaanact gcttcagggg gtgtaaaatg aaaggcttcc acgcagttat 60
ctgattaaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacactatag 120
caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
ctcgccgtgg ctattcctcn ttgtattac accagngagg ntctctgtnt gcccactggc 240
tnnaaaaccg ntatacaata atgatagaat aggaracaca c

```

281

<210> 434

<211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```

ttttaaata agcatttagt gctcagtcac tactgagtag tcttctcttc cctctctctg 60
aatttaattc tttaacttgg caatttgcaa ggattacaca tttaactgtg atgtatattg 120
tggtgcaaaa aaaaaaaagt gtcttctgtt aaaaattact gggttctgaa tccatcttgc 180
ttttcccca ttggaaactg tcattaaacc atctctgaac tggtagaaaa acatctgaag 240
agctagtcta tcagcatctg acaggctgaat tggatggctt tcagaaccat tccarccaga 300
cagctgtgtt ctatccctgt taataaatta gtttgggttc tctacatgca taacaaacc 360
tgctccaatc tgtcacataa aagtcctgtg cttgaagttt agtcagcacc cccaccaaac 420
tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaataaag taccatgtc 480
tita

```

484

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```

gcgcgctca gagcaggtca cttctgtgct tccacgtcct ccttcaagga agccccatgt 60
gggtagcttt caatatcgca ggttcttact cctctgtctc tataagctca aaccaccaa 120
cgatcgggca agtaaacccc ctcctctgct gacttcggaa ctggcgagag ttcagcgag 180
atgggctgtt ggggaggggg caagatagat gagggggagc ggcatgggtc ggggtgacc 240
cttggagaga ggaanaaggc cacaagaggg gctgccaccg ccaactaagg agatggcct 300
ggtagagacc tttgggggtc tggaaacctt ggactcccca tgctctaaat cccacactct 360
gctatcagaa acttaacctt gaggatttct tctgttttct actcgcaata aattcagagc 420
aaac

```

424

<210> 436

<211> 567

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (567)

<223> n = A, T, C or G

<400> 436

```

accttgggaa naactctaca atataaaggg togtagactt tactccaat tccaaaaagg 60
tcttggccat glaactctga aagttttccc aaggtagcta taaaatcctt ataaggggtc 120
agccttttct ggaattcttc tgatttcaa gtctnactct caagttcttg aaaaagggg 180
cagttcctga aaggcaggtg tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
atgggctgac agagtaggat aggattccag atgctgacac ctctctgggg aaacagggct 300
gccaggtttg tcatagcaat catcaaatg cggtcacagt ctgtgcttgg aatataaacc 360

```

```

tggtcatgtt tataggactc attcaagaat ttcttatata tttttcttat atactctcca 420
agttcataat gctgctccat gccagctgg gtgagttggc caaatccttg tggccatgag 480
gattccttta tggggtcagt gggaaaggtg tcaatgggac ctgggtctcc atgccgaaac 540
accaagtc acaacttcaa ctcttggct agtacacttc ggtctagcca gaaaaaagc 600
agaaacaaga agccaaggct aaggcttgc gccctgccag gaggaggggt gcagctctca 660
tggtgag 667

```

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

```

ctacgtctca accctcattt ttaggttaagg aatcttaagt ccaagatat taagtgactc 60
acacagccag gtaaggaaag ctggattggc acactaggac tctaccatac cgggttttgt 120
taagctcag gttaggagggc tgataagctt ggaaggaaat tcagacagct ttttcagatc 180
ataaaagata attcttagcc catgtttctc tccagagcag acctgaaatg acagcacagc 240
aggtaactct ctattttcac cctcttgc tctactctc ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatggt tgtacagatc atggactatt ctctgtggac 360
catttctcca ggttacccta ggtgtcacta ttggggggac agccagcacc tttagcttcc 420
atttgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480
acacctaact gctgttgctc ctgaggtggg gaaagacaga tatagagctt acagtattta 540
tctatttct aggcactgag ggtgtgggg taccttggg tgccaaaaca gatcctgttt 600
taaggacatg ttgttccaga gatgtctgta actatctggg ggtctgtgtg gctctttacc 660
ctgcctcatg tgcctctctg gctgaaastg acc 693

```

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

```

ctgcttatca caatgaatgt tctcctgggc agpgttgtga tctttgccac ctctgtgact 60
ttatgcaatg catcatgcta ttccatacct aatgagggag tccaggaga ttcaaccagg 120
atgtttctac acctgtgggt tatgacaaag acaactgcca aagaatcttc aagaaggagg 180
actgcaagta tatctgtggg agaagaagga ccaaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgcttcta gtaggcacag ggtccocagg ccaggcctca ttctctctg 300
gctcttaata gtcaataatt gtgtagccat gcttatcagt aaaaagattt ttgagcaaac 360

```

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(431)

<223> n - A, T, C or G

<400> 439

```

gttctnnta actcctgcc aaaaacagctc tctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agcctbggct tcttgtttct gcttttttcc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgt gtttoggcat ggagaccgaa 180
gtcccattga cactttccc actgaccca taaaggaaac ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgctga cgggcgccg 420
aatttagtag t 431

```

<210> 440
 <211> 523
 <212> DNA
 <213> Homo sapiens

<400> 440
 agagataaag cttagggtcaa agttcataga gtccccatga actatatgac tggccacaca 60
 ggatcttttg tatttaagga ttctgagatt ttgcttgagg aggattagat aaggctgttc 120
 tttaaatgtc tgaatggaa cagatttcaa aaaaaaccc cacaatctag ggtgggaaca 180
 aggaaggaaa gatgtgaata ggtgatggg caaaaaacca atttaccat cagttccagc 240
 ctctcttcaa ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
 actggaaaac tgcactatc tgttttata ttctgttaa aatatctgag gctacagaac 360
 taaaaattaa aacctctttg tgtcccttgg tcttggaaac tttatgttc ttttaagaa 420
 acaaaaatca aactttacag aaagatttga tgtatgtaac acatatagca gctcttgaag 480
 tatatatatc atagcaata agtcacttga tgagaacaag cta 523

<210> 441
 <211> 430
 <212> DNA
 <213> Homo sapiens

<400> 441
 gtctctctta actcctgcca gaaacagctc tcttcaacat gagagctgca cccctcctcc 60
 tggccagggc agcaagcctt agccttgggt tcttgtttct gctttttttc tggctagacc 120
 gaagtgtact agccaaggag ttgaagtttg cgaactttgg gttttggcat ggagaccgaa 180
 gtcccattga cactttccc actgaccca taaaggaatc ctcatggcca caaggatttg 240
 gccaaactac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
 gatataagaa attcttgaat gactcctata aacatgaaca ggtttatatt cgaagcacag 360
 acgttgaccg gactttgatg agtgctatga caaacctggc agccctgcga cggggccgag 420
 aatttagtag 430

<210> 442
 <211> 362
 <212> DNA
 <213> Homo sapiens

<400> 442
 ctaagggaatt agtagtgctc ccatacattg tttagagtgt gctattctaa aagattttga 60
 ttctctggaa tgacaattat atttcaactt tggtagggga aagagttata ggaccacagt 120
 cttaactttc gatacttgta aattaatctt ttattgcact tgttttgacc attagctat 180
 atgttttaga acggtcattt tacggaaaaa ttgaaaaaat tctgataata gtgcagaata 240
 aatgaattaa tgttttactt aatttatatt gaactgtcaa cgacaataaa aaattttttc 300
 tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaggt ttgattacag 360
 tc 362

<210> 443
 <211> 624
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...[624]
 <223> n = A, T, C or G

<400> 443
 tttttttttt gcaacacaat atacatcaca gtgaatgtg taatccttgc aaattgcaag 60

```

ttgaaagaat taaattcaga ggaggggaga gaaagagtag tcagtaggga ctgagcacta 120
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180
tgetggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
cccaaacac agaaatggg gtgaatttg ccaactttct attaatcttg ctccctgttt 300
tataaaatat tgtgaataat atcacctact tcaaagggca gttatgaggc ttaaatgaac 360
taacgcctac aaaaacotta aacatagata acatagggtc aagtactatg tatctggtac 420
atggtaaaca tccctattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaatt 480
agtacagaga gagggcaactt aaaccaacta agggcctgga ggggaagggtt cctggaaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactatgacc ttggcccaat tattttaat 600
ttgtccctat ctgctaaaca gatac 624

```

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(425)

<223> n = A,T,C or G

<400> 444

```

gcacatcatt nntcttgcac tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaataag aacaagtaag 120
ttcattgcta tagcataaca caaaatttgc ataagtgggtg gtcagcaaat ccttgaatgc 180
tgettaatat gagagggttg taaaatcctt tgtgcaacac tctaactccc tgaatgtttt 240
gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaagag caaccagcca 300
cctctgcaat ctgcacctc ctgtgtggag gatttgtttt tgcatcctgt gaagagccaa 360
ggaggcacca gggcataagt gactagactt atggtcgacg cggccgcgaa tttagtagta 420
gtaga 425

```

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 445

```

aatgtttatg nttttggatt aatttgggca cctagtgttt ctaaactgac tatcattctt 60
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
tgaaattctt tgcabtggtg agattatbgy atgtagtctt ctttaactag catataaatc 180
tgytgbtctt cagataaatg aacagcaaaa bgtggtggaa ttaccatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gattatgtaa caaatcacta ttccctaacc attgatcttt 300
ggatttttat aatctactc acaaatgact aggetctctc tottgtattt tgaagcagtg 360
tgggtgtctg attgataaaa aaaaaaaaag tcgacgcgyc cgcgaattta gtac 414

```

<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(631)

<223> n = A,T,C or G

<400> 446

```
acaaattaga anaaagtgc agagaacacc acataccttg tccggaacat tacaatggct 60
tctgcatgca tgggaagtgt gaggattcta tcaatatgca ggagccatct tgcagggtgtg 120
atgctggtta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttgttc 180
ccggtcctgt acgatttcag tatgtcttaa tggcagctgt gattgggaca attcagattg 240
ctgtcatctg tgtggtggtc ctctgcatca caagggccaa actttaggta atagcattgg 300
actgagattt gtaaaccttc caaccttcca ggaaatgccc cagaagcaac agaattcaca 360
gacagaagca aatatcaggg cactacagtt cagacaatac aacaagagcg tccacgaggt 420
taatctaaag ggagcatggt tccacagtggc tggactaccg agagcttggg ctacacaata 480
cagtattata gacaaaagaa taagacaaga gatctacaca tgttgccctg catctgtggt 540
aatctacacc aatgaaaaca tgtactacag ctatatattga ttatgtatgg atatatttga 600
aatagtatac attgtcttga tgtttttct g 631
```

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(585)

<223> n = A,T,C or G

<400> 447

```
ccttgggaaa antntcaca tataaagggt cgtagacttt actccaaatt ccaaaaagggt 60
cctggccatg taatcctgaa agttttccca aggtagctat aaatcccta taagggtgca 120
gcctctttctg gaattcctct gatttcaaaag tctcactctc aagttcttga aaacgagggc 180
agttcctgaa aggcaggtat agcaactgat cttcagaaag aggaactgtg tgcaccggga 240
tgggctgcca gagtaggata ggattccaga tgcagacacc ttctggggga aacaggggtg 300
ccagggtttgt catagcactc atcaaagtcc ggtcaaogtc tgtgcttcca atataaacct 360
gttcatgttt ataggactca ttcaagaatt ttctatatct ctttcttata tactctccaa 420
gttcaataatg ctgctccatg ccagctggg tgagttggcc aaatccctgt ggccatgagg 480
attcctttat ggggtcagtg ggaaagggtt caatgggact tgggtctoca tggcgaaaca 540
ccaaagtcac aaacttcaac tcttgggcta gtacacttgg gtcta 585
```

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(93)

<223> n = A,T,C or G

<400> 448

```
tgtctgtggg tcattctgan nncgaactg accntgccag ccttgcggan gggccnccat 60
ggctccctag tgcctggag agganggggc tag 93
```

<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(706)

<223> n = A,T,C or G

<400> 449

```

ccaagttcat gctntgtgct ggacgctgga caggggggcaa aagcnnntgc tctgtgggtca 60
ttctgancac cgaactgacc atgcccagccc tgcogatggg cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtccctggaag gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggctcggggc cgtcccatc gccattcagg ctgcgcaact 240
gttgggaagg gogatcggtg cgggcctctt cgtattacg ccagctggcg aaagggggat 300
gtgctgcaag gcatattaagt tgggtaacgc caggggtttc ccagtcncca cgttgtaaaa 360
cgaaggccag tgaattgaat ttagggtgacn ctatagaaga gctatgacgt cgcattgcacg 420
cgtacgttaag cttggatcct cttagagcggc cgtctactac tactaaatc ggggcggcgt 480
cgaagtgagg tccncaactga gagagtgagg agtgacatgt gctggacnct gtccatgaag 540
cactgagcag aagctggagg cacaacgcnc cagacactca cagctactca ggaggtgag 600
aacaggttga acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncacca 660
gcattggaatg cagagtgaaa ctccatctta aaaaaaanaa aaaaaa 706

```

<210> 450

<211> 493

<212> DNA

<213> Homo sapiens

<400> 450

```

gagacggagt gtcactctgt tgcacaggct ggagtgacgc aagacactgt ctaagaaaaa 60
acagttttta aaggtaaaaa aacataaaaa gaatatcct atagtggaaa taagagagtc 120
aaatgagggt gagaaactta caaaggagtc ttacagacat gtcgccaata tcactgcacg 180
agcctaagta taagaacaa ctttggggag aaaccatcat ttgacagtga ygtacaatc 240
caagtcagggt agtgaaatgg gtggaattaa actcaaatc atcttgccag ctgaaacgca 300
agagacactg tcagagagtt aaaaagtgag ttctatccat gaggtgattc cacagtcttc 360
tcaagtcacac acatctgtga actcacagac caagtcttta aaccactgtt caaactctgc 420
tacaatcacg aatcacctgg agagctttac aaactcccat tgcggagggg cgaagcgggc 480
gcgaatttag tag 493

```

<210> 451

<211> 501

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...{501}

<223> n = A,T,C or G

<400> 451

```

ggggcgctcc ccttcgccat tcaggctgag caactgttgg gaagggcgat cggtgogggc 60
ctcttcgcta ttacgcccgc tggcgaaaag gggatgtgct gcaaggcgat taagtgggt 120
aacgccaggg ttttccagc cncgacgttg taaaacgacg gccagtgagt tgaatttagg 180
tgacmctata gaagagctat gacgtcgcat gcacgcgtac gtaagcttgg atctctaga 240
gcggccgctt actactacta aattcgcggc cgcgtcgacg tgggatccnc actgagagag 300
tggagagtga catgtgctgg acnctgtcca tgaagcactg agcagaagct ggaggcacia 360
cgcnccagac actcacagct actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgcaatga gotgagatca ggcnctgcnc ccccgacatg gatgacagag tgaactcca 480
tcttaaaaaa aaaaaaanaa a 501

```

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(51)
 <223> n = A,T,C or G

<400> 452
 agacgggtttc accnttataa cnccttttag gatgggnntt ggggagcaag c 51

<210> 453
 <211> 317
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(317)
 <223> n = A,T,C or G

<400> 453
 tacatcttgc tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa 60
 acatctgaag agctagteta tcagcatctg gcaagtgaat tggatggttc tcagaacctat 120
 ttacccana cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca 180
 taacaaaccc tgcctcaatc tgcacaataa aagtctgtga cttgaagttt antcagcacc 240
 cccaccaaac tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaagg 300
 taccatgtc tttatta 317

<210> 454
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 454
 ttccaggtac aatcaactct cagagtgtag ttcccttcta tagatgagtc agcattaata 60
 taagccacgc cagctctctg aaggagtctt gaattctctt ctgctcactc agtagaacca 120
 agaagaccaa attctctctg atcccagctt gcaaacaaaa ttgttctctt aggtctccac 180
 ccttctcttt tcagtgttcc aaagctcctc acaatttcat gaacaacagc c 231

<210> 455
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 455
 taccaaagag ggcataataa tcagtctcac agtaggggtc accatcctcc aagtgaaaaa 60
 cattgttccg aatgggtttt ccacaggcta cacacacaaa acaggaaaca tgctaagttt 120
 gtttcaacgc attgatgact tctccaagga tcttctcttg gcctcgacca cattcagggg 180
 caaagaattt ctcatagcac agctcacaat acagggtctc tttctctct a 231

<210> 456
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 456
 ttggcaggta cctttacaaa gaagacacca taccttatgc gttattaggt ggaataatca 60
 ttccattcag tattatcgtt attattcttg gagaacacct gtctgtttac tgtaaccttt 120
 tgcactcaaa ttcctttatc aggaataact acatagccac tatttacaaa gccattggaa 180

ccctttttatt tgggtgcagct gctagtcagt cctgactga cattgccag t 231

<210> 457

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(231)

<223> n = A,T,C or G

<400> 457

cgaggtaccc aggggtctga aaatctctnn tttantagtc gatagcaaaa ttgttcatca 60
gcattcctta atatgatctt gctataatta gattttcttc cattagagtt catcacgttt 120
tatttgattt tattagcaat ctctttcaga agacccttga gatcattag ctttgtatcc 180
agttgtctaa atcgatgcct ctttctctct gaggtgtcgc tggcttttgt g 231

<210> 458

<211> 231

<212> DNA

<213> Homo sapiens

<400> 459

aggtcttggt ccccccaatt ccactccct ctactctctc taggactggg ctgggcccaag 60
agaagagggg tggttaggga agcgttgag acctgaagcc ccacctcta ctttccttca 120
acacctaac ctgggtaac agcatttga attatcattt gggatgagta gaatttccaa 180
ggctctgggt taggcatttt gggggggccag accccaggag aagaagattc t 231

<210> 459

<211> 231

<212> DNA

<213> Homo sapiens

<400> 459

ggtaccgagg ctgcgtgaca cagagaaacc ccaacgcgag gaaaggaatg gccagccaca 60
ccttcgggaa acctgtgggt gccaccagt cctaacggga caggacagag agacagagca 120
gacctgcaat gttttccctc caccacagcc atcctgtccc tcattggctc tgtgctttcc 180
actatacaca gtcccgctcc caatgagaaa caagaaggag caccctccac a 231

<210> 460

<211> 231

<212> DNA

<213> Homo sapiens

<400> 460

gcaggtataa catgctgcaa caacagatgt gactaggaac ggcgggtgac atggggaggg 60
cctatcaccc tattcttggg ggtgcttct tcacagtgat catgaagcct agcagcaat 120
cccacctccc cacacgcaca cggccagcct ggagcccaca gaagggtcct cctgagacca 180
gtggagcttg gtccagctc cagtccacc caccaggct taaggataga a 231

<210> 461

<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

cgaggttttg gaagctctaa tgtgcagggg agctgagaag caggoggcct agggagggtc 60

gogtgtgctc cagaagagtg tgtgcatgac agaggggaaa caggcgctg tgtgtcctgg 120
 gtggggttca gtgaggagtg ggaattgggt tcagcagcac caagccgttg ggtgaataag 180
 agggggattc catggcactg atagagccct atagtctcag agctgggaat t 231

<210> 462

<211> 231

<212> DNA

<213> Homo sapiens

<400> 462

aggtaccctc attgtagcca tgggaaaatt gatgttcagt ggggatcagt gaattaaatg 60
 gggctcatgca agtataaaaa ttaaaaaaaa aagacttcac gcccaatctc atatgatgtg 120
 gaagaactgt tagagagacc aacagggtag tgggttagag atttccagag tcttacattt 180
 tctagaggag gtatttaatt tcttctcact catccagtgt tgtatttagg a 231

<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

tactccagcc tgggtacaga gogagaccct atcaccgccc cccacccac caaaaaaana 60
 actgagttaga cagggtgctct ctgggcatgg taagtcttaa gtcccctccc agatctgtga 120
 catttgacag gtgtcttttc ctctggacct cgggtgtccc atctgagtga gaaaaggcag 180
 tggggagggtg gatcttccag tcgaagcggg atagaagccc gtgtgaaaag c 231

<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

gtactctaaag attttatcta agttgccttt totgggtggg aaagtctaac cttagtgact 60
 aaggacatca catatgaaga atgtcttaagt tggagggtggc aacgtgaatt gcaaacaggg 120
 cctgcttcag tgactgtgtg cctgttagtc cagctactcg ggaagtctgtg tgaggccagg 180
 ggtgccagcg caccagctag atgctctgta acttctaggc cccattttcc c 231

<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

catgttggtg tagctgtggt aatgctggct gcatctcaga cagggttaac ttcagctcct 60
 gtggcaaat agcaacaaat tctgacatca tatttatggt ttctgtatct ttgttgatga 120
 aggatggcac aatttttgc tgtgttcata atatactcag attagttcag ctccatcaga 180
 taaactggag acatgcagga cattagggtg gtgttgtagc tctggtaatg a 231

<210> 466

<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

caggtaacctc tttccattgg atactgtgct agcaagcatg ctctccgggg tttttttaat 60
 ggcccttcgaa cagaacttgc cacataccca ggtataatag ttcttaacat ttgccagga 120
 cctgtgcaat caaatattgt ggagaattcc ctgactggag aagtcacaaa gactatagga 180
 aataatggag accagtccca caagatgaca accagtgtt gtgtgcggct g 231

<210> 467
<211> 311
<212> DNA
<213> Homo sapiens

<400> 467
gtacaccctg gcacagtcca atctgaactg gtccggcact catctttcat gagatggatg 60
tgggtggcttt tctccttttt catcaagact cctcagcagg gagcccagac cagcctgcac 120
tgtgccttaa cagaaggctc tgagattcta agtgggaatc atttcagtga ctgtcatgtg 180
gcattgggtct ctgcctaaagc tctgaatgag actatagcaa ggcggctgtg ggacgtcagt 240
tgtgacctgc tgggcctccc aatagactaa caggcagtg cagttggacc caagagaaga 300
ctgcagcaga c 311

<210> 468
<211> 3112
<212> DNA
<213> Homo sapiens

<400> 468
cattgtgttg ggagaaaaac agaggggaga tttgtgtggc tgcagccgag ggagaccagg 60
aagatctgca tgggtgggaag gacctgatga tacagagttt gataggagac aattaaaggc 120
tggaaaggcac tggatgcctg atgatgaagt ggcctttcaa actggggcac tactgaaccg 180
atgggatggc cagagacaca ggagatgagt tggagcaagc tcaataacaa agtgggtcaa 240
cgaggacttg gaattgcatg gagctggagc tgaagttag cccaattggt tactagtga 300
gtgaatgttg atgattggat gatcatttct catctctgag cctcagggtt cccatccata 360
aatggggata cacagtatga tctataaagt gggatatagt atgactact tcactgggtt 420
atttgaagga tgaattgaga taatttattt cagggtgcta gaacaatgcc cagattagta 480
catttgggtg aactgagaaa tggcataaca ccaaatttta tatatgtcag atgttactat 540
gattatcatt caatctcata gttttgtcat ggcctaattt atctcactt gtgctcacc 600
aaattgaact gttacaaaag gaatctctgg tccctgggtaa tggctgagca ccaactgagca 660
ttccattcc agttggcttc ttgggtttgc tagctgcac actagtcac ttaataaat 720
gaagttttta catctctcca gtgatttttt tatctcacc ttgaagatac tatgttatgt 780
gakttaataa agaacttgag aagaacaggc ttcatataac ataaaatcaa tgtagacgca 840
aattttctgg atgggcaata ctatgttca caggaaatgc tttaaaatat gcagaagata 900
attaaatggc aatggacaaa gtgaaaaact tagacttttt tttttttttt ggaagtatct 960
ggatgttctt tagtcaactta aaggagaact gaaaaatagc agtgagtcc acataatcca 1020
acctgtgaga ttaaggctct ttgtggggaa ggcacaaagt ctgtaaaatt acagtttctt 1080
tccaaagcca acctcgaatt ttgaacata tcaaaagctct tctcaagac aaataatcta 1140
tagtacatct ttcttatggg atgcacttat gaaaaatggg ggtgtcaac atctagtca 1200
tttgtctctc aaatgggttc attttaagag aaggtttttg actctcatat ttattctgt 1260
ggaaggacag cattgtggct tggactttat aaggctctta ttcaactaaa taggtgagaa 1320
ataagaaaag ctgtgtactt taccatctga ggcacacat ctgtgaaat ggagataatt 1380
aacatcacta gaaacagcaa gatgacaata taatgtctaa gtatgacat gtttttgcac 1440
atttcagcc cetttaata tccacacaca cagggaagac aaaaaggagc acagagatcc 1500
ctgggagaaa tgcctggcgg ccactctggg tcatcgatga gctcgcctt gtgcttggc 1560
cgccttgtga gggaaggaca ttagaanaat aattgatgtg ttccttaag gatgggcagg 1620
aaaacagatc ctgttgtgga tatttatttg aacgggatta cagatttgaa atgaagtcac 1680
aaagttagca ttaccaatga gaggaaaaa gacgagaaa tcttgatggc ttcaacagac 1740
atgcaacaaa caaaatggaa tactgtgatg acatgaggca gccaaagctgg ggaggagata 1800
accacggggc agagggctcag gattctggcc ctgctgccta aactgtggt tcatnaccaa 1860
atcatttcat atttctaacc ctcaaaacaa agctgttcta atatctgac tctacggttc 1920
cttctgggcc caacattctc catatatcca gccacactca ttttcaatat ttagttccca 1980
gatctgtact gtgacctttc tacactgtag aataacatta ctcatttgt tcaagaccc 2040
tttgtgtg tgcctaatat gttagctgact gtttttcta aggagtgttc tggccaggg 2100
gatctgtgaa caggctggga agcatctcaa gatctttcca gggttatact tactagcaca 2160
cagcatgac attacggag gaattatcta atcaacatca tctcagtggt ctttggccat 2220
actgaatttc atttccact tttgtccca ttctcaagac ctcaaatgt cattccatta 2280

```

atatacaggg attaactttt ttttttaacc tggagaagatt caatgttaca tgcagctatg 2340
ggaatttaast tacataattt gttttccagt gcaagatga ctaagtcctt tateccctcc 2400
ctttgtttga ttttttttcc agtataaagt taaaabgctt agccttgtaa tgaggctgta 2460
tacagccaca gctctccccc atccctccag ccttatctgt catcaccatc aacccctccc 2520
atgcacctaa acaaaatcta acttgtaact ccttgaaatc gtcaggcata cattattcct 2580
tctgctgag agctctctcc ttgtctctta aacttagaat gatgtaaggt ttgaaataag 2640
ttgactatct tacttcatgc aaagaaggga cacatatgag attcatcatc acatgagaca 2700
gcaataacta aaagtgtaat ttgattataa gattttagat aaatatatga aatgcaagag 2760
ccacagaggg aatgtttatg gggcacgttt gtaagcctgg gatgtgaagc aaaggcaggg 2820
aacctcatag tatcttatac aatatacttc atttctctat ctctatcaca atatccaaca 2880
agcttttccac agaattcatg cagtgcaaat ccccaagggt aacctttatc catttcatgg 2940
tgagtgcgtc ttagaatttt ggcaaatcat actggtcact tatctcaact ttgagatgtg 3000
tttgtcttg tagttaattg aaagaaatag ggcactcttg tgagccactt tagggttcac 3060
tcttggaat aaagaattta caaagagcaa aaaaaaaaaa aaaaaaaaaa aa 3112

```

<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

```

agctctttgt aaattcttta ttgccaggag tgaacctaa agtggctcac aagagtggcc 60
tatttcttcc aatttaactac aaggacaaac acatctcraa gttgagataa gtgaccagta 120
tgatttgcca aaattctaaa gcgcactcac catgaaatgg ataaaggcta cctttgggga 180
tttgcaactgc atgaattctg tgaagagctt gttggatatt gtgatagaga tagagaaatg 240
aagtatatta tataagatac tatgaggttc cttgoccttg cttcacatcc caggcttaca 300
aacgtgcccc ataaacatcc cctctgtggc tcttgcatcc catatattta tctaaactct 360
tataatcaaa tacactttta gtatttgcgt tctcatgtga tgatgaatct catatgtgct 420
ccttctttgc atgaagtaag atagtcaact tattcaaaac ttacatcatc tctagattta 480
agagacaagg aagagcttct caggcagaag gaataatgta tgcctgacat gttcaaggaa 540
ttacaagtta gattttgttt aggtgcatgg gaggggttga tgggtgatgac agataaggct 600
ggagggatgg ggagaggctg tggctgtata cagctcactt acaaggctaa gcattttaac 660
tttatactgg aaaaaaatac aaacaaaggg gaggyataaa ggaacttagtc atctttgca 720
tggaacacaa aatagttaat taattctccc tagctgcatg taacattgaa ttcttccagg 780
tcaaaaaaaa agttaatcct gtgatattaa tggaaagaca ttttgaggtc ttgagaatgg 840
gcacaaaagt gggaaatgaa tttcagtatg ggcacagaca ctgaggatga tgttgattag 900
ataattcact ccgtaatgat catgctgtgt gctagttaag ataaccttgg aagatctttg 960
agatgcttcc cagctgttcc acagatccccc tgggcnagaa cactccttag gaaaaacagt 1020
cagctacata ttaggcagca acacgaaggg cttttgaaca aaatgagtaa tgttattcta 1080
cagtgtagaa aggtcacagt acagatctgg gaactaaata ttaaaaatga gtgtggctgg 1140
atatatggag aatgttgggc ccagagggaa ccgtagagat cagatattac accagctttg 1200
ttttgagggg tagaaatatg aaatgatttg gttatgaacg cacagtttag gcagcagggc 1260
cagaatcctg accctctgcc ccgtgggtat ctctcccca gcttggctgc ctcatgtcat 1320
cacagtattc caatttgttt gttgcatgtc ttgtgaagcc atcaagattt tctgtctgt 1380
tttctctcca ttggttaatgc tcaatttgtg acttcatttc aaatctgtaa tcccgttcaa 1440
ataaatatcc acaacaggat ctgttttctt gccatcctt taagggaacac atcaattcat 1500
tttctaattg ccttccctca caagcgggac caggcacagg gcgaggctca tcatgaccc 1560
aagatggcgg ccgggcattt ctcccaggga tctctgtgct tctttttgtg ctctctgtgt 1620
gtgtggatat ttaagggggc tggaaatgtg caaaaacatg tcaactacta gacattatat 1680
tgtcatcttg ctgtttctag tgatgttaat tatctcatt tcaagagabg tgtggcctca 1740
gatggtaaaq tcaagagcct ttcttatttc tccctgggaa atacatacga ccatttgagg 1800
agacaaatgg caaggtgtca gcatccctg aacttgagtt gagagctaca caaatatta 1860
ttggtttccg agcatcaca acacctctc tgtttcttca ctgggcacag aattttaata 1920
cttatttcag tgggtgtgtg gcaggaacaa ctacagcaat ctacataaag tcaactagtgc 1980
agtgcctgac acacaccatt ctcttgaggt cccctctaga gatccacag gtcatatgac 204
ttcttgggga ccagtggtc acacctgtaa tcccagcact ttgggaggtc gaggcaggtg 2100
ggtcacctga ggtcaggagt tcaagaccag cctggccaat atggtgaaac cccatctcta 2160
ctaaaaatac aaaaattagc tgggcgtgct ggtgcatgcc tgaatccca gccccaacac 2220

```

aatggaatt

2229

<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

```

gtaaattctt tattgccagg agtgaacct aaagtggctc acaagagtgc cctatttctt 60
tcaatttaact acaaggacaa acacatctca aagttgagat aagtgaaccag tatgatttgc 120
cnaaattcta aagcgcactc accatgaat ggetaagggt tacccttggg gatttgcact 180
gcatgaatkc tgtgaaaagc ttgttggata ttgtgataga gatagagaaa tgaagtatat 240
tatataagat actatgaggt tccctgcctt tgcttcacat cccaggctta caaacgtgcc 300
ccataaacat tccctctgtg gctcttgcct ttcatatatt tatctaaact cttataatca 360
aattacactt ttagtatctg ctgtctcctg tgatgatgaa tctcatatgt gtcccttctt 420
tgcataaggt aagatagtea aottattcaa aactttaoat cttctatgat ttaagagaca 480
aggaagagct tctcaggcag aaggaaataat gtatgcctga catgttcaag gaattacaag 540
ttagatbttg tttagggtga tgggaggggt tgatggtgat gacagataag gctggaggga 600
tggggagagg ctgtggtctg atacagcctc agtacaagge taagcatttt aactttatac 660
tggaaabaaa atcaaacaaa ggggagggat aaaggactta gtcactcttg cactggaaaa 720
caaaatatgt aattaaatcc ccatagctgc atgtaacatt gaattcttcc aggttaaaaa 780
aaaaagctaa tcccttgata ttaatggaat gacattttga ggtcttgaga atgggcacaa 840
aagtgggaaa tgaatttcag tatgggcaaa gacactgagg atgatgttga ttagataatt 900
cactccgtaa tgatcatgct gtgtgctagt aagtataacc ctggaaagat cttgagatgc 960
tccccagcct gttcacagat cccctgggcc agaacactcc ttaggaaaaa cagtcagcta 1020
cataattaggc agcaacacga aggtctcttg aacaaaatga gtaactgtat tctacagbgt 1080
agaaaggcca cagtacagat ctgggaacta aatattaaaa atgagtgttg ctggatatat 1140
ggagaatggt gggcccagaa ggaaccgtag agatcagata ttacaacagc tttgttttga 1200
gggttagaaa tatgaaatga ttbggttatg aaogcacagt ttaggcagca gggccagaat 1260
cctgaaccctc tgcctcgttg ttatctctct cccagcttgg ctgcctcctg tcatcacagt 1320
attccatttt gtttgttgca tgtcttctga agccatcaag attttctcgt ctgttttctt 1380
ctcatctgta atgctcactt tgtgaactca ttccaatct gtaatccctg tcaaatatat 1440
atccacaaca gpatctgttt tctgccccat cctttaaagg acaatcaat tcaatttcta 1500
atgtctctcc ctcccaagcg ggaaccaggca cagggtcagg ctcatcgatg acccaagatg 1560
ggggccggggc atttctccca gggatctctg tgcttctctt tgtgcttctt gtgtgtgtgg 1620
atatttcaag gggctggaaa tgtgcaaaaa catgtcacta cttagacatt atattgtcat 1680
cttgcctgtt ctagtgtatg taattatctc catttcagca gatgtgtggc ctacagatgt 1740
aaagtcagra gccctttctta ttctcaccct ggaataacat acgaccattt gaggagacaa 1800
ttggcaaggt gtcagcacc cctgaacttg agttgagagc tacacacaat attacttggt 1860
atcgagcaca acaaacaccc tctctgtttc tctactgggc acagaatttt aatacttatt 1920
tcagtggtgt gttggcagga acaaatgaag caatctacat aaagtcaata gtgcagtggc 1980
tgacacacac cattctcttg aggtccctct tagagatccc acaggtcata tgacttcttg 2040
gggagcagtg gctcacacct gtaatccag cactttggga ggctgaggca ggtgggtcac 2100
ctgaggtcag gatttcaaga ccagcctggc caatatgggtg aaaccccatc tctactaaaa 2160
atcaaaaaat tagctgggcy tgcctgggca tgcctgtaac cccagctact tgggaggtct 2220
aggcaggaga attgctggaa catgggaggc ggaggttgca gtgagctgta atgtgtccat 2280
tgcactcgaa cctgggcgac agagtggaac tctgtttcca aaaaacaaac aaacaaaaaa 2340
ggcatagtca gatacaacgt ggtggggatg tgtaaataga agcaggatat aaagggcatg 2400
gggtgaoggt tttgcccac acaatg

```

<210> 471

<211> 812

<212> DNA

<213> Homo sapiens

<400> 471

```

gaacaaaatg agtaattgta ttctacagt tagaaaggct acagtaacaga tctgggaact 60
aaatattana aatgagtggt gctggatata tggagaatgt tgggcccaga aggaaccgta 120

```

```

gagatcagat attacaacag ctttgttttg aggggttagaa atatgaantg atttgggttat 180
gaacgcacag tttaggcagc aggggccagaa tcttgacct ctgcccctgt gttatctctt 240
ccccagcttg gctgctcat gtcacacag tattccattt tgtttgttgc atgtcttctg 300
aagccatcaa gattttctcg tctgttttcc tctcattggt aatgctcact ttgtgacttc 360
atttcaaatc tgytaatccg ttcaataaaa tatccacac aggatctgtt ttctgcccc 420
tcttttaagg aacacatcaa ttcatTTTTt aatgtcttc cctcacacagc gggaccagge 480
acagggcgag gctcatcgat gacccaagat ggcggcgagg catttctccc agggatctct 540
gtgcttctct ttgtgcttcc tgtgtgtgtg gatattttaa ggggctggaa atgtgcaaaa 600
acatgtcaat acttagacat tatattgtca tcttgctgtt tctagtgtg ttaattatct 660
ccatttcagc agatgtgtg cctcagatgg taaagtccgc agcctttctt atttctccc 720
tctgtatcat caggtctctt ccacatgca gatcttctg gctcctctg gctgcagcca 780
cccaaatctc cctctgttt ttctgatgcc ag

```

812

<210> 472

<211> 515

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(515)

<223> n = A,T,C or G

<400> 472

```

acggagactt atttctgat attgtctgca tatgtatgtt ttaagagtc tggaaatagt 60
cttatgactt ccttatctg cttatctata aataatcac ccagagagag atgaaaatgg 120
gttccagaaat tattggtcct tgcagcccg tgaatctcag caagaggaa cccaactga 180
caatcaggat attgaacctg gacaagagag agaaggaa cctcogactg aagaaogtaa 240
agttagaggt gattgcccag aatggatct ggaaaagact cggagtggag gtggagatgg 300
ctctgatgta aaagagagga cccacctaa tctcaagcat gtaagacta aagaagcagg 360
agatgggcag ccataagtta aaaagaagac aagctgaagc tacacacatg gctgatgtca 420
cattgaaaat gtgactgaaa atttgaaaat tctctcaata aagtttgagt tttctctgaa 480
gaaaaaanaa naaaaaaanaa aaaaaaanaa aaaaaa

```

515

<210> 473

<211> 5629

<212> DNA

<213> Homo sapiens

<400> 473

```

cgcctgcccg ggaagcccaa gctggctcga agagccacca gccacctgtg caagggctgg 60
cctggaccag ttggaccagc caccaagctc acctactcaa ggaagcaggg atggccaggt 120
tgcaacagcc tgagtggctg ccacctgata gctgatggag cagaggcctg aggaatatca 180
gatggacat tttagctctt aatggatctt aagttaat ttctataaag cacatggcac 240
cagtccatgc ctacagctc gtatggcaet gcggaccaca gcaggccag ttccagagat 300
tgccatccag gggggccttc tgtagccctg gccagacct gcagaggctg ctgggtcttc 360
tttgagcgag ctggcctcc ctggcatgca caggccccag gtaactgacac gctgctctga 420
gtgagcttgt cctgctctg ctgccaccta actgctgatg gaggcagcggc cttaggaaaa 480
gcaaatggcg ctgtagccca accttagggt agaagaagat gtacctgtgc cggccgctag 540
ttggtgactg gtgcacctgc tcttggtgta ccttgacaga ggtgggtggg tgcctcttgg 600
ccagcttggc ctgctctggc atgcacacgc ctgagtgcaa caactgtctt acaaatggag 660
acacagagag gaaacagca ggggctcag gagcagggtg tgtgctgctt ttggggctcc 720
agtcctatgc tcgggtctga tggtaactgca ggcttcttgg ttgccaagag ggggaccaca 780
ggccttcttg aggaggaact tacgttcaag tgcagaaagc agccaaaatt accatccatg 840
agactaagcc ttctgtggcc ctggcgagac ttaaaatttg tgccaaggca ggacaagctc 900
actcggagca gctgtcagt agctggggcc tatgcatgcc gggcagggcc gggctggctg 960
aaggagcaac cagccacctc tgcaagggtg cgcctagtgc agggggagca tccacacctt 1020
caccgcctcg aggaagtggg gatggccagg ttccacacgc ctgagtgtct gccaccttat 1080

```

tgctgatgga	gcagaggcct	taagaaaage	agatggcact	gtggccctac	cttcagggtg	1140
gaagaagtga	tgtacatgtc	cggacgctaa	ttgggtgactg	gtacacccggc	tcctgctaca	1200
cctttgcaga	gggtgctggg	tgctctttga	gccagcttgt	ccttgcccgg	catgcacaag	1260
tttcagtgca	acaactttgc	cacaaatgga	gccatataga	ggaacaaga	agcaggttca	1320
ggagaagggt	gtaccctgoc	tttggggctc	cagtccatgc	ctcaggtgtc	acatggcact	1380
gogggcttct	tgggtgcccag	gaggcggacc	acaggccatc	ttggggagga	ctttgtgttc	1440
aagtgcagaa	agcagccagg	attgccatcc	agggggacct	tctatagccc	tggccaaacc	1500
ttgcagggggt	gtctgggtgc	tctttgagcc	ggcttggcct	ccctggcatg	cacgggcccc	1560
aggtgctggc	acgctgctcc	gagtgtgctt	gtcctgcctt	ggctgcccac	tctgcggggg	1620
tgcgtctgga	gggggtggac	ogggccaccaa	ccttaccocag	tcaagggaagt	ggatggccat	1680
gttcccacag	cctgagtggc	tggccactga	tggctgatgg	agcaaaaggcc	ttaggaaaag	1740
cagatggccc	ttggccctac	ctttttgtta	gaagaactga	tgttccatgt	cctgcagcga	1800
gtgagggtgg	tggctgtgcc	cccagctcct	ggcgccgccc	cgcagagggtg	actgggttgc	1860
ctttgggccc	tcttggcctt	gcccagcatg	cacaagcctc	agtgtacta	ctgtgtctaca	1920
aatggagcca	tataggggaa	aogagcagcc	atctcaggag	caaggtgtat	gtgcctcttg	1980
ggggctccag	tccctgcttc	aagggtctta	tgtcaactgtg	ggcttcttgg	ttgtcaagag	2040
gcagaccata	ggcctgtctg	agagggactt	tatgttcaag	tgcagaaagc	agccaggatt	2100
gccaccctcg	ggactctgoc	ttctgtggcc	ctggccaaac	ttagaatttg	gcogtagaca	2160
ggacaggctc	acttggagta	gogtgtccgt	agctggggtc	tgtgcatgoc	gggcaaggcc	2220
gggctggctc	ggggagcaac	cagccacctc	tgcgggggtg	cgcctggagc	aggtggagca	2280
gccaccagct	caccactcct	aggaagccgg	ggtagccagg	tcccaaggc	ctgagtgggc	2340
gccacctaat	ggctgaagaa	acagaggcct	tgggaaaacc	agatggcact	gtggccctac	2400
ctttatggta	gaagagctga	tttagcctga	ctggcagcgt	gtgggttggg	tggctggctc	2460
gocctgctgct	ggcgcatccg	tgcagggtg	gtgggttggc	ctttgagcca	gtttggcctt	2520
gcccggcatg	cgcgaagcctc	agtgcaccaa	ctgtgctgca	aatggggcca	tatagaggaa	2580
aggagcagct	ggctctggag	catgggtgtc	actcccttgg	ggccttcagt	ccatgtctca	2640
tgggtcgtat	gacactgcgg	gcttgttggg	tgcgaagagg	cagaccacag	gtcatcttga	2700
ggaggacttt	atgttccagt	ccagaaaagca	gccagtggta	cccccaggg	gaettgtgct	2760
tctgtgccca	ggccagacgt	agaatttgac	aaagtccagg	cggctcagc	cagagccggc	2820
tgtoggtccc	cggggcctgt	gcattgcccgg	cagggccggg	ctggcttggg	gagcaagcag	2880
ccacctctgt	taaggggtgtg	cctggagcag	gtggagcagc	caccaacctc	acgcaactga	2940
agaagcaggg	atggccagggt	tccaacctcc	tgagtggctg	ccacctgatg	gctgatggag	3000
cagaggcctg	aggaaaagca	gatggcactg	ctttgtagt	ctgttctctg	tctctcttga	3060
tctttctcag	ttatgtctg	ctttatcaga	gaataggatt	gcaaaccttg	ctcttttttg	3120
ctttccattt	gttgggtaaa	tattcctcca	tcccttctat	ttaagcctat	gltgtgcttt	3180
gcacatgaga	tgggtctcct	gaatacagga	caacaatggg	tctttactct	ttatccact	3240
tgcagctctg	tgtcttttaa	ctggggcatt	tagcccatct	acatttaagt	ttagtattgt	3300
tacatgtgaa	atttatctctg	tcatgatgtt	gctagccttt	tatttttccc	attagtttgc	3360
agtttcttla	tagtgtcaat	ggtctttaca	attcgatagt	tttttgtagt	ggctggctact	3420
ggtttttctt	ttctacgttt	agtgtctcct	tcaggagctc	ttgtaacaca	agaatgtgga	3480
ttcatctctt	gtaaggtaaa	tatgtggatt	tattctcttg	gactgtatcc	tatggccttt	3540
accccaagaa	tcattacttt	ttaaaatgca	attcaaatga	gcstaaaaca	tttccagcct	3600
atggaaaggc	ttgtggcatt	agaatcctta	tttataggat	tattttgtgt	ttttttgaga	3660
tatggctctt	gtcatcgagg	cagaagtggc	gtggtttgat	cataattcac	cacagccctg	3720
aactcttgag	tccaagccat	cotttttgct	taactctcca	accagcttga	tctgcaggca	3780
taaggcatca	tgcgtggcta	attttttcac	gttttttttt	tttttttggc	gagattatag	3840
tgtcactgtg	tgtctctggc	tgatctcaaa	tgtttgacct	caagggatcc	ttctgccacc	3900
gcctcctaaa	gtgctaggat	tacatgccat	ataccacctg	cctattgtag	agtattacat	3960
tattttcaaa	gtcttattgt	aagagccatt	tattgccttt	ggcctaaata	actcaatata	4020
atatctctga	aacttttttt	tgcacaaattt	tggggcgtga	tgatgagaga	aggggggtttg	4080
aaactttcta	ataagagtta	acttagagcc	atttaagaaa	ggaaaaaaca	caaatttatca	4140
gaaaaacaa	agtaagatca	agtgcacaaag	ttctgtggca	aagatgatga	gagtaaaaga	4200
tatatgtttg	tgaactatgg	tggctttttac	ttgttcttgg	aattttotag	taoggggttaa	4260
catttaagga	atctacatta	tagataacat	tttattgcaa	gtaaatgtat	ttcaaaattc	4320
gttattgggt	ttgtatgaga	ttattctcag	cctacttcat	tatcaagcta	tattatttta	4380
ttaatgtagt	togatgatct	tacagcaag	ctgaaagctg	tattttcaaa	atatgtctac	4440
ttgaactaaa	agttatttcaa	caggagttat	tatttataaa	aaaaatacaa	cagggaatata	4500
aaaaacttga	ggatanaaag	atgttggaaa	aagtaattatt	aatctttaa	aacatattgg	4560

```

aaactacaca atggtgaaga cacattggtg aagtacaaaa atataaattg gatctagaag 4620
aaagggcaat gcaggcaata gaaaaattag tagaaatccc tttaaggtt agtttgttaa 4680
atcaggtaag tttatttata atttgctttc atttatttca ctgcaaatla ttttttggat 4740
atgtatatat attgtgcttc ctctgectgt cttacagcaa ttgctttgc agagttctag 4800
gaaaaagggtg gcatgtgttt ttactttcaa aatattttaa ttccatcat tataacaaaa 4860
tcaatttttc agagtaaatg ttctcactgt ggagtcattt gattatttaag accogttggc 4920
ataagattac atcctctgac tataaaaaatc ctggaagaaa acctaggaaa tattctctctg 4980
gacattgcac ttggcaatga atttatgggt aacctctgat ccacttccag tcaactatca 5040
tgagttttta ttccagata catgaaatca tatgagttga aactttcttt tgattgagca 5100
gtttggaac cgtctttttg tagaatctgc aagtggatat ttggaacct ttgaggccta 5160
tgctgaaaaa agaatatctt tcaactacat atgaccccca gtagcagctg gggaaacag 5220
caccctgttg aattccatac ggtgcataga ataatctctc ctttcagtcg gcttgggtca 5280
acttaggtca tgggccacct ggctgatagc agtttccaca gaaatgttcc aagatgaag 5340
tggatgaccg gggccacctc caccactgac ctgtaagacc atgggacaca caggccacca 5400
gtctttttca tgtggtcact cctgtttaga tgggagaaaa taccctgac tcatttttgt 5460
accttctgtg tgaacattcc acggcagact gtcgctaaat gtagatgaag aattgaaatg 5520
atgaatgaat atgagagaaa atgaataaat ggttcagatc ctgggctgga aggtgtgtg 5580
tgagtaggtt ggttagagga ggtctctgtt ttcttgcttc taagtcaact attgtactt 5640
tggggcagga gcacaggtt tgaatgcaga ccgactggac ttaattctct gcttactag 5700
ttgtgattgt gtgacctgt gaaagttact taacctctct gtgctgttt ctttatctgt 5760
aaaatggaga caacaagatg tcaaggact gtggtgaaga ttaaatgctt taaaaaaaaa 5820
aaaaaaaaa

```

5829

<210> 474

<211> 1594

<212> DNA

<213> Homo sapiens

<400> 474

```

atttatggat cattaatgac tcttttagtag tttagagaaa acgtcaaaag aatgggcccc 60
agaataagct tcttgatttg taaaatttca tgtcattggc tcaaatttgt atagtatctc 120
aaaatataaa tataatagaca tctcagataa tatatttgaa atagcaaat cctgttagaa 180
aataatagta ctttaactaga tgagaataac aggtogccat tatttgaatt gtctccatt 240
cgtttttctc ttgttgtgtt actcatgttt tacttatgag ggatatatat aacttccact 300
gttttcagaa ttattgtatg cagtcagtat gagaatgcaa ttttaagttc cttgatgttt 360
tttccactt ctattactag aataagaat acagtaatat tggcaagaa aattgaccag 420
ttcaataaaa ttcttttagta aatctgattg aaantaanac ttgcttatgg ctttcttaca 480
tcaatattgt tatgtctctg acaccttato tgaattacg gcttcaaat tctaattatg 540
tgcaaatgtg taaaatatca atactttatg ttcaagctgg ggctcttca ggcgtctctg 600
gctgagagag aagatgcta gctccgcaag ccggagaggg aacacogcca cattgttaca 660
cggacacacc gccacgtgga cacatgacca gactccatg tccagacca cggagacatt 720
accacatgga gacaccgtca cacagtcaaa cggacacact ggcatagtca catggacgga 780
cacacagaca tatggagaaa tcacatggac acacacacac actatcacag ggacacagac 840
acacggagac atcaccacat ggacacactg tcacactacc acagggacac gagacatcac 900
actgtccat ggacacacca tcacacacat gaacacaccc acacactgac atatggacac 960
tggcacacac actgccacac tgtcacatgg acacacctcc acacactcac accacacac 1020
acartgctg tggacacaa gacacacaga cactgtcaca cagatacaca aaacactgtc 1080
acaogagac atcaccatgc agatacacca ccactctggt gccgtctgaa ttacctgtct 1140
ggggggacag cagtggcata ctcatgccta agtgactggc ttccacccca gtagtgattg 1200
ccctccatca acactgacca cccaggttg gggctacccc agcccatctt taaaaacag 1260
ggcaagggtg actaatggag tgggtggagg agttggaga aatcccagcg tcagtccacg 1320
ggatagaact cccaaggaa cctctttttg gaggatgggt tccattctct gaggcgatct 1380
cccagacagg tgaatgcctt cttgcttctc ttctggggaa tcagagagag tccgttttgt 1440
ggtgggaaga gtgtggctgt gtactttgaa ctctgtgaaa ttctctgact catgttaca 1500
aaacoacag tttgtgaaat gtgtctggag gcaagggaag ggcactcag gatctatgtt 1560
gaagggaaga ggcctggggc tggagtattc gctt

```

1594

<210> 475

<211> 2414
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> {33}
 <223> n=A,T,C or G

<400> 475
 cccaacacaa tggctttata agaatgcttc acntgtgaaa aacaaatata aaagtcttct 60
 tgtagattat ttttaaggac aaatctttat tccatgttta atttatttag ctttccctgt 120
 agctaatatt tcatgttgaa cacattttta atgctgtaaa tgtagataat gtaatttatg 180
 tatcattaat gcctcttttag tagtttagag aaaagtcaa aagaaatggc ccagaataaa 240
 gcttcttgat ttgtaaaatt ctatgtcatt ggctcaaatt tgtatagtat ctcaaatat 300
 aatatatag acatctcaga taatatatctt gaatatagaa atttctgtta gaaataata 360
 gtacttaact agatgagaat aacaggtcgc cattatttga attgtctoct attcgttttt 420
 catttgttgt gttactcatg ttttacttat ggggggatat atataacttc cgtgttttct 480
 agaagtattg ttgtcagtcg gtatgagaat gcaatttaag tttccttgat gctttttcac 540
 acctctatto ctagaataaa gaatacagta atattggcaa agaaaattga ccagttcaat 600
 aaaatttttt agtaaatctg attgaaaata aacattgctt atggctttct tacatcaata 660
 ttgttatgtc ctagacacct tatctgaaat taoggttca aaattctaat tatgtgcaaa 720
 tgtgtaaaat atcaatactt tatgttcaag ctggggcctc ttcaggcgtc ctgggtgag 780
 agagaaagat gctagctcgg caagcggggg agggaaacac gccacattgt tacatggaca 840
 caccgccacg tggacacatg accagactca catgtacaga cacaggaga cattaccaca 900
 tggagacacc gtacacacgt caccagagca cactggcata gtcacatgga cggacacaca 960
 gacatatgga gaatacacc tgacacacca ccaactatc acagggacac agacacacgg 1020
 agacatcacc acatggacac actgtcacac taccacaggg acacgagaca tcaactgtc 1080
 acatggacac accatcacac acatgaacac accgacacac tgcacatggy acactgccac 1140
 acacactgcc acactgtcac atggacacac ctccatacca tcacaccacc acacacactg 1200
 ccatgtggac acaaggacac acagacactg tcacacagat acacaaaaa ctgtcacacg 1260
 gtagacatcac catgcagata caccaccaca tggacatagc accagacact ctgccacaca 1320
 gatacaccac cacacagaaa tgcggacaca ttgccacaca gacaccacca catcgttggc 1380
 acactttcat gtgtcagctg ggggtgtggg cccacagact ctgggctcta atcagaaaat 1440
 tacttggaca tatagtgaag gcaaaatttt tttttatttt ctgggttaac aagcgcgact 1500
 ctgtctcaaa aaaagaaaaa aaaagcaata tactgtgtaa tcgttgacag cataattcac 1560
 cattatgtag atcggagagc agaggattct gaatgcata acatatcatt aacatttcaa 1620
 tacattactc ataattactg atgaactaaa gagaaaccaa gaaattatgg tgatagttat 1680
 attgacctgg agaaatgtag acacaaaga accgtaagat gagaaatgtg ttaacacagt 1740
 ctataagggc atgcaagaat aaaaataggy gagaaaacag gagagttttt caagagcttt 1800
 ctggctcatg aagtcacatt gtatcgttta attttttana ggtttattta catgcattaa 1860
 actgcacata ctccaattgt accttttggc aattcttggc atttgtagct ctataaaac 1920
 agcaacatat taaaatagca aacatatcca ttacctttac caccaaagtt ttcttgtgtt 1980
 ttttctactc actttttcct gactatcccc ccatctcttc cacaggtaac cactgatcca 2040
 cttccagtcg ctatccatga gtttttattt ccaaatacat gaaatcatat gaatttctgg 2100
 ttttctctgt tggagcccaa ggagcaaggg cagaatgagg aacatgatgt ttcttwccga 2160
 cagttactca tgacgtctcc atccaggact gaggggggca tcttctcca tctaggactg 2220
 ggggcctcct tctccatcca gtattggggg tcatcttctt ccatecagta ttgggggtca 2280
 tctctctcca tccaggacct gaggggtgtc ctttcttgcg cttccttggg tggcagctct 2340
 tcccttcattg tttatagtra cttaccatta aatcactgtg ccgttttttc ctaaaaataa 2400
 aaaaaaaaaa aaaa 2414

<210> 476
 <211> 3434
 <212> DNA
 <213> Homo sapiens

<400> 476

ctgtgctgca	aatggggcca	tatagaggaa	aggagcaget	ggctctggag	catgggtgtgc	60
actocctttg	ggccttcagt	ccatgtctca	tgggtcgtat	gacactgcgg	gcttgttggg	120
tgccaagagg	cagaccacag	gtcatcttga	ggaggacttt	atgttccagt	ccagaaagca	180
gocagtggta	ccaccacagg	gacttgttgt	tctgtggccc	aggccagacg	tagaatttga	240
caaagtcagg	acgggtctcag	tcagagcagc	atgtcgggtcc	cgggggcttg	tgcatgccgg	300
gcaggggccag	gcttggttaa	ggagcaagca	gcacactctg	ttagggggtg	gocctggagca	360
ggttgagcag	ccaccaaccc	cacgcactga	aagaagcagg	gatggccagg	ttccaacatc	420
ctgagtggct	gocacctgat	ggctgatgga	gcagaggcct	gaggaaaagc	agatggcact	480
gctttgtagt	gctgtctctt	gtctctcttg	atctttttca	gttaatgtct	gttttatcag	540
agactaggat	tgcaaaacct	gctctttttt	gctttccatt	tgcttggtaa	atattccctc	600
atccctttat	tttaagccca	tgtgtgctct	tgccactgag	atgggtctcc	tgaatacagg	660
acaacaatgg	gtctttactc	tttatccaac	ttgccagtct	gtgtctttta	actggggcat	720
ttagcccat	tacatttaag	tttagtattt	gttacatgtg	aaatttatcc	tgtcatgatg	780
ttgctagctt	tttatttttc	ccattagtct	gcagtttctt	tatagtgtca	atggctctta	840
caattcgata	tgttttttga	gtggctggta	ctgggttttc	ctttctacgt	ttagtgtctc	900
cttcaggagc	tcttgaaca	caagaatgtg	gatttatctc	ttgtaaggta	aatatgtgga	960
tttattctgg	gactgtatcc	tatggccttt	accccaagaa	tcattacttt	ttaaaatgca	1020
attcaaatata	gcataaaaca	tttacagcct	atggaaggcc	ttgtggcatt	agaatccctc	1080
tttataggat	kattttgtgt	ttttttgaga	tatgtctctt	gtcctcgagg	cagnagtggc	1140
gtggtttgat	caataattcac	cacagccctg	aactcttgag	tcgaagccat	ctttttgcct	1200
taatctccca	accagttgga	tctacaagca	taaggcatca	tgctgtggta	attttttcac	1260
gttttttttt	tttttgcoga	gattatggta	tcactgtggt	gctctggctg	atctcaaatg	1320
tttgaccica	agggatcttt	ctgccacagc	ctcctaaagt	gctaggatta	tatgcatgat	1380
acaccatgcc	tattgtagag	tattacatta	ttttcaaggt	cttattgtaa	gagccattta	1440
ttgcctttgg	cctaaataac	tcaatataat	atctctgaaa	cttttttttg	acaaattctg	1500
gggcttgatg	atgagagag	ggggtctgaa	actttctaat	aagagttaac	ttagagccat	1560
ttaagaaagg	aaaaaacaca	aattatcaga	aaaacacacg	taagatcaag	tgcaaaagtt	1620
ctgtggcaaa	gatgatgaga	gtaaagaata	tatgtttgtg	actcatggtg	gcttttactt	1680
tgttcttgaa	tttctgagta	cgggttaaca	tttaagaat	ctacattata	gataacattt	1740
tattgcaagt	aaatgtatct	caaaatttgt	tattgggttt	gtatgagatt	attctcagcc	1800
tacttcatta	tcaagctata	ttattttatt	aatgtagctc	gatgatctta	cagcaaaagt	1860
gaagctgta	tcttcaaat	atgtctattt	gactaaaag	ttattcaaca	ggagtattta	1920
tctataaaaa	aatacaacag	gcataataaa	aacttgagg	taaaagatg	ttggaaaang	1980
taataattaaa	tcttaaaaaa	catatggaaa	ctacacaatg	gtgaagacac	attgggtgaag	2040
tacaaaaata	taaattggat	ctagaagaaa	gggcaatgca	ggcaatagaa	aaatttagag	2100
aaatcccttt	aaaggttagt	ttgtaaaatc	aggtaagttt	atttataatt	tgtttccatt	2160
tatttccctg	caaattatct	tttggatatg	tatatataat	gtgcttccct	tgcctgtctt	2220
acagcaattt	gctttgcaga	gttctaggaa	aaagggtgca	tgtgttttta	ctttcaaaat	2280
attttaaatt	ccatcattat	aacaaaatca	atttttcaga	gtaatgattc	tcactgtgga	2340
gtcatttga	tattaagacc	ogttggcata	agattacatc	ctctgactat	aaaaatccct	2400
gaagaaaaac	taggaaatat	tggctctggac	attgcacttg	gcaatgaatt	tatggggcct	2460
ttggaatcct	gcagatataa	taatgataat	taaacaaaaac	actcagagaa	actgccaac	2520
ctaggatgaa	gtatatgtgt	actgtgcttt	gggattaaaa	taagtaacta	cagtttatag	2580
aacttttata	ctgatacaca	gacactaaaa	agggaaagg	tttagatgag	aagctctgct	2640
atgcaatcaa	gaatctcagc	cactcatctc	tgtagggtct	gcaggagctc	cctgttaaga	2700
gaggttatgg	agctctgagc	ttcaggtaag	atacttaaaa	cccttcagag	tttctccatt	2760
ttttcccata	gtttcccbaa	aaaggttatg	acactttata	agaatgcttc	acttgtgaaa	2820
aaacaatata	aaagtctctt	tgtagattat	ttttaaggac	aaatctttat	tccatgttta	2880
atttatttag	ctttccctgt	agctaataat	tcattgctgaa	cacattttta	atgctgtaaa	2940
tgtagataat	gtaatttatg	tatcattaat	gocctcttag	tagtttagag	aaaaogtcaa	3000
aagaatggc	cccagaataa	gcttcttgat	ttgtaaaatt	ctatgtcatt	ggctcaatt	3060
tgtatagtat	ctcaaaatat	aaatatatag	acatctcaga	taatatattt	gaatatagca	3120
attctctgta	gaaaataata	gtacttaact	agatgagaat	aacaggtcgc	cattatttga	3180
attgtctcct	atttgttttt	catttgttgt	gttactcatg	ttttacttat	ggggggatat	3240
atataacttc	ogctgttttc	agaagtattg	tatgcagtca	gtatgagaat	gcaatttaag	3300
tttccctgat	gctttttcac	acttctctta	ctagaaataa	gaatacagta	atattggcaa	3360
agaaaaattga	ccagttcaat	aaaaattttt	agtaaatctg	attgaataa	aaaaaaaaaa	3420
aaaaaaaaaa	aaaa					3434

165

<210> 477
 <211> 140
 <212> PRT
 <213> Homo sapiens

<400> 477
 Met Asp Gly His Thr Asp Ile Trp Arg Asn His Met Asp Thr Pro Pro
 5 10 15
 His Tyr His Arg Asp Thr Asp Thr Arg Arg His His His Met Asp Thr
 20 25 30
 Leu Ser His Tyr His Arg Asp Thr Arg His His Thr Val Thr Trp Thr
 35 40 45
 His His His Thr His Glu His Thr Asp Thr Leu Pro Tyr Gly His Trp
 50 55 60
 His Thr His Cys His Thr Val Thr Trp Thr His Leu His Thr Ile Thr
 65 70 75 80
 Pro Pro His Thr Leu Pro Val Asp Thr Arg Thr His Arg His Cys His
 85 90 95
 Thr Asp Thr Gln Asn Thr Val Thr Arg Arg His His His Ala Asp Thr
 100 105 110
 Pro Pro Leu Trp Cys Arg Leu Asn Tyr Pro Ala Gly Gly Thr Ala Val
 115 120 125
 Ala Tyr Ser Cys Leu Ser Asp Trp Leu Ser Pro Gln
 130 135 140

<210> 478
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 478
 Met Tyr Arg His Thr Glu Thr Leu Pro His Gly Asp Thr Val Thr Gln
 5 10 15
 Ser His Gly His Thr Gly Ile Val Thr Trp Thr Asp Thr Gln Thr Tyr
 20 25 30
 Gly Glu Ile Thr Trp Thr His His His Thr Ile Thr Gly Thr Gln Thr
 35 40 45
 His Gly Asp Ile Thr Thr Trp Thr His Cys His Thr Thr Thr Gly Thr
 50 55 60
 Arg Asp Ile Thr Leu Ser His Gly His Thr Ile Thr His Met Asn Thr
 65 70 75 80
 Pro Thr His Cys His Met Asp Thr Gly Thr His Thr Ala Thr Leu Ser
 85 90 95

His Gly His Thr Ser Thr Pro Ser His His His Thr His Cys Leu Trp
 100 105 110
 Thr Gln Gly His Thr Asp Thr Val Thr Gln Ile His Lys Thr Leu Ser
 115 120 125
 His Gly Asp Ile Thr Met Gln Ile His His His Ser Gly Ala Val
 130 135 140

<210> 479
 <211> 222
 <212> PRT
 <213> Homo sapiens

<400> 479
 Met Tyr Arg His Thr Glu Thr Leu Pro His Gly Asp Thr Val Thr Gln
 5 10 15
 Ser His Glu His Thr Gly Ile Val Thr Trp Thr Asp Thr Gln Thr Tyr
 20 25 30
 Gly Glu Ile Thr Leu Thr His His His Thr Ile Thr Gly Thr Gln Thr
 35 40 45
 His Gly Asp Ile Thr Thr Trp Thr His Cys His Thr Thr Thr Gly Thr
 50 55 60
 Arg Asp Ile Thr Leu Ser His Gly His Thr Ile Thr His Met Asn Thr
 65 70 75 80
 Pro Thr His Cys His Met Asp Thr Ala Thr His Thr Ala Thr Leu Ser
 85 90 95
 His Gly His Thr Ser Ile Pro Ser His His His Thr His Cys His Val
 100 105 110
 Asp Thr Arg Thr His Arg His Cys His Thr Asp Thr Gln Asn Thr Val
 115 120 125
 Thr Arg Arg His His His Ala Asp Thr Pro Pro His Gly His Ser Thr
 130 135 140
 Arg His Ser Ala Thr Gln Ile His His His Thr Glu Met Arg Thr His
 145 150 155 160
 Cys His Thr Asp Thr Thr Thr Ser Leu Pro His Phe His Val Ser Ala
 165 170 175
 Gly Gly Val Gly Pro Thr Thr Leu Gly Ser Asn Arg Glu Ile Thr Trp
 180 185 190
 Thr Tyr Ser Glu Gly Lys Ile Phe Phe Tyr Phe Leu Gly Asn Gln Ala
 195 200 205
 Arg Leu Cys Leu Lys Lys Arg Lys Lys Lys Gln Tyr Thr Val
 210 215 220

<210> 480
 <211> 144
 <212> PRT
 <213> Homo sapiens

<400> 480
 Met Glu Pro Tyr Arg Gly Asn Glu Gln Pro Ser Gln Glu Gln Gly Val
 5 10 15
 Cys Cys Leu Trp Gly Leu Gln Ser Leu Pro Gln Gly Ser Tyr Val Thr
 20 25 30
 Val Gly Phe Leu Val Val Lys Arg Gln Thr Ile Gly Arg Leu Glu Arg
 35 40 45
 Asp Phe Met Phe Lys Cys Arg Lys Gln Pro Gly Leu Pro Pro Ser Gly
 50 55 60
 Leu Cys Leu Leu Trp Pro Trp Pro Asn Leu Glu Phe Gly Arg Arg Gln
 65 70 75 80
 Asp Arg Leu Thr Trp Ser Ser Val Ser Val Ala Gly Val Cys Ala Cys
 85 90 95
 Arg Ala Arg Pro Gly Trp Leu Gly Glu Gln Pro Ala Thr Ser Ala Gly
 100 105 110
 Val Arg Leu Glu Gln Val Glu Gln Pro Pro Ala His Pro Leu Gln Glu
 115 120 125
 Ala Gly Val Ala Arg Phe Pro Arg Pro Glu Trp Val Pro Pro Asn Gly
 130 135 140

<210> 481
 <211> 167
 <212> PRT
 <213> Homo sapiens

<400> 481
 Met His Gly Pro Gln Val Leu Ala Arg Cys Ser Glu Cys Ala Cys Pro
 5 10 15
 Ala Leu Ala Ala Thr Ser Ala Gly Val Arg Leu Glu Gly Val Asp Arg
 20 25 30
 Pro Pro Thr Leu Pro Ser Gln Gly Ser Gly Trp Pro Cys Ser His Ser
 35 40 45
 Leu Ser Gly Cys His Leu Met Ala Asp Gly Ala Lys Ala Leu Gly Lys
 50 55 60
 Al Asp Gly Pro Trp Pro Tyr Leu Phe Val Arg Arg Thr Asp Val Pro

168

65 70 75 80
 Cys Pro Ala Ala Ser Glu Val Gly Gly Cys Ala Pro Ser Ser Trp Arg
 85 90 95
 Ala Leu Ala Glu Val Thr Gly Cys Ser Leu Gly Pro Leu Gly Leu Ala
 100 105 110
 Gln His Ala Gln Ala Ser Val Leu Leu Cys Tyr Lys Trp Ser His
 115 120 125
 Ile Gly Glu Thr Ser Ser His Leu Arg Ser Lys Val Tyr Ala Ala Phe
 130 135 140
 Gly Gly Ser Ser Pro Cys Leu Lys Gly Leu Met Ser Leu Trp Ala Ser
 145 150 155 160
 Trp Leu Ser Arg Gly Arg Pro
 165

<210> 482

<211> 143

<212> PRT

<213> Homo sapiens

<400> 482

Met Glu Pro Tyr Arg Gly Asn Lys Lys Gln Val Gln Glu Lys Gly Val
 5 10 15
 Pro Cys Leu Trp Gly Ser Ser Pro Cys Leu Arg Cys His Met Ala Leu
 20 25 30
 Arg Ala Ser Trp Leu Pro Gly Gly Gly Pro Gln Ala Ile Leu Gly Arg
 35 40 45
 Thr Leu Cys Ser Ser Ala Glu Ser Ser Gln Asp Cys His Pro Gly Gly
 50 55 60
 Pro Ser Ile Ala Leu Ala Lys Pro Cys Arg Gly Val Trp Leu Leu Phe
 65 70 75 80
 Glu Pro Ala Trp Pro Pro Trp His Ala Arg Ala Pro Gly Ala Gly Thr
 85 90 95
 Leu Leu Arg Val Cys Leu Ser Cys Leu Gly Cys His Leu Cys Gly Gly
 100 105 110
 Ala Ser Gly Gly Gly Gly Pro Ala Thr Asn Leu Thr Gln Ser Arg Lys
 115 120 125
 Trp Met Ala Met Phe Pro Gln Pro Glu Trp Leu Pro Pro Asp Gly
 130 135 140

<210> 483

<211> 143

<212> PRT

169

<213> Homo sapiens

<400> 483

```

Met Glu Thr Gln Arg Gly Asn Lys Gln Arg Ala Gln Glu Gln Gly Val
      5              10              15
Cys Cys Leu Trp Gly Ser Ser Pro Cys Leu Gly Ser Tyr Gly Thr Ala
      20              25              30
Gly Phe Leu Val Ala Lys Arg Arg Thr Thr Gly Leu Leu Glu Glu Asp
      35              40              45
Phe Thr Phe Lys Cys Arg Lys Gln Pro Lys Leu Pro Ser Met Arg Leu
      50              55              60
Ser Leu Leu Trp Pro Trp Arg Asp Leu Lys Phe Val Pro Arg Gln Asp
      65              70              75              80
Lys Leu Thr Arg Ser Ser Val Ser Val Ala Gly Ala Tyr Ala Cys Arg
      85              90              95
Ala Gly Pro Gly Trp Leu Lys Glu Gln Pro Ala Thr Ser Ala Arg Val
      100             105             110
Arg Leu Val Gln Ala Glu His Pro Pro Pro His Pro Leu Glu Glu Val
      115             120             125
Gly Met Ala Arg Phe Pro Gln Pro Glu Cys Leu Pro Pro Tyr Cys
      130             135             140

```

<210> 484

<211> 30

<212> PRT

<213> Homo Sapien

<400> 484

```

Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly Phe
  1      5              10              15
Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile
      20              25              30

```

<210> 485

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 485

gggaagctta tcaactatgt gccgcctctg c

31

<210> 486

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 486

gagaattctc acgctgagta ttggcc

27

<210> 487

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 487

cagaattctc tagctgccca tcgaagcc ttcatc

36

<210> 488

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 488

gggaagcttc ttccccggct gcaccagctg tgc

33

<210> 489

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 489

Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala

1 5 10 15

Ser Val Ala

<210> 490

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 490

Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys

1 5 10 15

Leu Ser His Ser

20

<210> 491

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 491

Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
1 5 10 15
Thr Gly Phe Thr
20

<210> 492

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 492

Ala Leu Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr
1 5 10 15
Leu Ala Ser Leu
20

<210> 493

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 493

Tyr Thr Leu Ala Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro
1 5 10 15
Lys Tyr Arg Gly
20

<210> 494

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 494

Leu Pro Lys Tyr Arg Gly Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser
1 5 10 15
Leu Met Ile Ser
20

<210> 495

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 495

Asp Ser Leu Met Thr Ser Phe Leu Pro Gly Pro Lys Pro Gly Ala Pro
 1 5 10 15
 Phe Pro Asp Gly
 20

<210> 496

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 496

Ala Pro Phe Pro Asp Gly His Val Gly Ala Gly Gly Ser Gly Leu Leu
 1 5 10 15
 Pro Pro Pro Pro Ala
 20

<210> 497

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 497

Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys Asp Val
 1 5 10 15
 Ser Val Arg Val
 20

<210> 498

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 498

Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala Arg Val
 1 5 10 15
 Val Pro Gly Arg
 20

<210> 499

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

173

<223> Made in a lab

<400> 499

Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 1 5 10 15
 Ser Ala Phe Leu
 20

<210> 500

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 500

Leu Asp Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met
 1 5 10 15
 Gly Ser Ile Val
 20

<210> 501

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 501

Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met
 1 5 10 15
 Val Ser Ala Ala
 20

<210> 502

<211> 414

<212> DNA

<213> Homo Sapien

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 502

caccatggag	acaggcctgc	gttggtttt	cctggctcgt	gtgctcaag	gtgtccaatg	60
tcagtogggt	gaggagtcg	gggtcgcc	ggtcacgct	gggacacctt	tgacntcc	120
ctgtagagtc	tttggatng	acctcagtag	caatgcaatg	agctgggtcc	gccaggctcc	180
aggggaaggg	ctggaatgga	tcggagccat	tgataattgt	ccacantacg	cgacctgggc	240
gaaaggccga	ttatnatntt	ccaaaacctn	gaccaagggtg	gatttgaaaa	tgaccagtcc	300
gacaaccgag	gacaaggcca	cctatttttg	tggcagaatg	aatactggta	atagtgggtg	360
gaagaatatt	tggggcccag	gcacctgggt	cacggtntcc	tcaggggcaac	ctaa	414

<210> 503

<211> 379

<212> DNA

<213> Homo Sapiens

<220>

<221> misc_feature

<222> (1) ... (379)

<223> n = A,T,C or G

<400> 503

atnccatgggt gcttgggtcaa aggtgtccag tgtccagtccg tggaggagtc cgggggtcgc	60
ctgggtcargc ctgggacacc cctgacacac accctgcaccg tntctggatt ngacatcagt	120
agctatggag tgagctgggt ccgccaggct ccagggaagg ggtcgggata catcggatca	180
ttagtagtag tggtagattt tacgogagct gggcgaaagg ccgattcacc atttccaaa	240
cctngaccac ggtggatttg aaaaaccaca gtttgacac ccaggacac gccacctatt	300
tntgtccag aggggggttt aattatsaag acatttgggg cccaggcacc ctggtcaccg	360
tntccttagg gcaacctaa	379

<210> 504

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 504

Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp Ser Pro Tyr Phe Lys Glu	
1 5 10 15	
Asn Ser Ala	

<210> 505

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 505

Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn Asp Asn Val Thr	
1 5 10 15	
Asn Thr Ala Asn	
20	

<210> 506

<211> 407

<212> DNA

<213> Homo Sapien

<400> 506

atggagacag gcctgcgctg gottctectg gtgctgcgc tcaaagggtg ccagtgtcag	60
tgcctggagg agtccggggg tgcctgggc acgctggga caccctgac actcactgc	120
accgtctctg gattctccct cagtagcaat gcaatgatct gggccggcca ggtccaggg	180
aaggggctgg aatacatcgg atacattagt tatgggtgta gcgcatacta cgcgagctgg	240
gtgaaaggcc gattcaccat ctccaaaacc tcgaccacgg tggatctgag aatgaccagt	300
ctgacaaccg aggacacggc cacctatttc tgtgccagaa atagtgtatt tagtggatatg	360
ctgtggggcc caggcaccct ggtcacctgc tctcagggc aacctaa	407

<210> 507
 <211> 422
 <212> DNA
 <213> Homo Sapien

<400> 507
 atggagacag gctcgcgctg gcttctctctg gtcgctgtgc tcaaagggtg coagtgtcag 60
 tcggtggagg agtcggggg tgcctgggc agcctggga caccctgac actcaactgt 120
 acagtctctg gattctcct cagcaactac gacctgaact gggtcgcca ggctccaggg 180
 aaggggctgg aatggatcgg gatcattaat tatgttggtt ggacggacta cgcgaactgg 240
 gcaaaaaggcc ggttcacat ctccaaaacc togaccaccg tggatctcaa gatcgccagt 300
 ccgacaaccg aggcacggc caccctatctc tgtgcccagag ggtggaagtg cgatgagctt 360
 ggtccgtgtg tgcgcatctg gggccraggc accctggta cctctctctt agggcaacct 420
 aa 422

<210> 508
 <211> 411
 <212> DNA
 <213> Homo Sapiens

<220>
 <221> misc_feature
 <222> (1)...(411)
 <223> n = A, T, C or G

<400> 508
 atggagacag gctcgcgctg gcttctctctg tgcgctgtgc tcaaagggtg coagtgtcag 60
 cgggtggagg gtcgggggt gcctgggta cgcctggga acccctgaca ctcaactgca 120
 cagtctcttg aatcgacctc agtagctact gcatgagctg ggtccggcag gctccagggg 180
 aggggctgga atggatcggg atcattggga ctctgggtga cacatactac gcgaggtggg 240
 cgaaaggccg attcaccatc tccaaaacct cgaccacggg gcatntgaas atcnccagtc 300
 cgacaacoga ggcacggcc acctatttct gtgccagaga tcttcgggat ggtagtagta 360
 ctggttatta taaaatcttg ggcacaggca cctgggtcac cgtctccttg g 411

<210> 509
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 509
 Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 1 5 10 15

<210> 510
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 510
 Pro Glu Tyr Asn Arg Pro Leu Leu Ala Asn Asp Leu Met Leu Ile
 1 5 10 15

<210> 511
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 511

Tyr His Pro Ser Met Phe Cys Ala Gly Gly Gly Gln Asp Gln Lys
 1 5 10 15

<210> 512
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 512

Asp Ser Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu
 1 5 10 15

<210> 513
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 513

Ala Pro Cys Gly Gln Val Gly Val Pro Asx Val Tyr Thr Asn Leu
 1 5 10 15

<210> 514
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 514

Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 1 5 10 15

<210> 515
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 515

Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg
1 5 10 15

<210> 516

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 516

Val Ser Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln
1 5 10 15

<210> 517

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 517

Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met
1 5 10 15

<210> 518

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 518

Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
1 5 10 15

<210> 519

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 519

Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg Asn Tyr Asp Glu Gly Cys
1 5 10 15
Gly

<210> 520

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 520

Val	Gly	Glu	Gly	Leu	Tyr	Gln	Gly	Val	Pro	Arg	Ala	Glu	Pro	Gly	Thr
1				5				10						15	
Glu	Ala	Arg	Arg	His	Tyr	Asp	Glu	Gly							
		20					25								

<210> 521

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 521

Ala	Pro	Phe	Pro	Asn	Gly	His	Val	Gly	Ala	Gly	Gly	Ser	Gly	Leu	Leu
1				5				10						15	
Pro	Pro	Pro	Pro	Ala											
				20											

<210> 522

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 522

Leu	Leu	Val	Val	Pro	Ala	Ile	Lys	Lys	Asp	Tyr	Gly	Ser	Gln	Glu	Asp
1				5					10					15	
Phe	Thr	Gln	Val												
			20												

<210> 523

<211> 254

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<220>

<221> VARIANT

<222> (1)...(254)

<223> Xaa = any amino acid

<400> 523

Met	Ala	Thr	Ala	Gly	Asn	Pro	Trp	Gly	Trp	Phe	Leu	Gly	Tyr	Leu	Ile
1				5				10						15	
Leu	Gly	Val	Ala	Gly	Ser	Leu	Val	Ser	Gly	Ser	Cys	Ser	Gln	Ile	Ile
		20					25					30			
Asn	Gly	Glu	Asp	Cys	Ser	Pro	His	Ser	Gln	Pro	Trp	Gln	Ala	Ala	Leu
		35					40						45		

Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pr Gln
 50 55 60
 Trp Val Leu Ser Ala Thr His Cys Phe Gln Asn Ser Tyr Thr Ile Gly
 65 70 75 80
 Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met
 85 90 95
 Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu
 100 105 110
 Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu
 115 120 125
 Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala
 130 135 140
 Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg
 145 150 155 160
 Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu
 165 170 175
 Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys
 180 185 190
 Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser Gly
 195 200 205
 Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly
 210 215 220
 Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu
 225 230 235 240
 Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 245 250

<210> 524

<211> 765

<212> DNA

<213> Homo sapien

<400> 524

atggccacag caggaaatcc ctggggctgg ttctctgggggt acctcatcct tgggtgtcga 60
 ggatcgctcg tctctggtag ctgcagccaa atcataaacg gogaggactg cagcccgac 120
 tcgcagccct ggcaggcggc actgggtcatg gaaaacgaat tggctctgctc gggcgctctg 180
 gtgcctcgc agtgggtgct gtcagccgca cactgtttcc agaactccta caccatcggg 240
 ctggggctcg acagtcttga ggccgaccaa gagccaggga gccagatggt ggaggccagc 300
 ctctccgtac ggcaccaga gtacaacaga cccttgcctc ctaacgacct catgctcctc 360
 aagttggaag aatccgtgtc cgagctctgac accatcggga gcacagcat tgcctcgcag 420
 tgcctacag cggggaactc ttgcctcgtt tctggctggg gtctgctggc gaacggcaga 480
 atgcctacag tgcctcagtg cgtgaacgtg tcggtgggtg ctgaggaggt ctgcagtaag 540
 ctctatgacc cgtgtacca cccagcatg ttctgcgccc gccgagggca agaccagaag 600
 gactcctgca acggtgactc tggggggccc ctgactctga accggtaact gcaggggcctt 660
 gtgtctttcg gaaaagcccc gtgtggccaa gttggcgtgc cagggtgcta caccacactc 720
 tgcgaattca ctgagtggat agagaaaacc gtccaggcca gttaa 765

<210> 525

<211> 254

<212> PRT

<213> Homo sapien

<400> 525

Met Ala Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile
 1 5 10 15
 Leu Gly Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile
 20 25 30
 Asn Gly Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu

35	40	45
Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln		
50	55	60
Trp Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly		
65	70	75
Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met		
	85	90
Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu		
100	105	110
Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu		
115	120	125
Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala		
130	135	140
Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg		
145	150	155
Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu		
	165	170
Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys		
180	185	190
Ala Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly		
195	200	205
Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly		
210	215	220
Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu		
225	230	235
Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser		
	245	250

<210> 526

<211> 963

<212> DNA

<213> Homo sapiens

<400> 526

```

atgagttcct gcaacttcac acatgccacc ttgtgctta ttggtatccc aggattagag 60
aaagccratt tctgggttgg ctcccccctc ctttccatgt atgtagtgge aatgtttgga 120
aactgcacog tggcttccat cgtaggagcg gaacgcagcc tgcacgctcc gatgtacctc 180
tttctctgca tgccttcagc cacttgacctg gccttatcca catccaccat gccttaagatc 240
cttgcccttt tctgggttga ttcccgagag attagctttg aggcctgtct taccagatg 300
ctctttatcc atgcctcttc agccattgaa tccaccatcc tgcctggcat ggcctttgac 360
ogttatgtgg ccatctgcca cccactggcg catgctgcag tgcctcaaca tacagtaaca 420
gcccagattg gcactgtggo tgtggtccgc ggatccctct ttttttccc actgcctctg 480
ctgatcaagc ggcctggcctt ctgccactcc aatgtctctt cgcactccta ttgtgtccac 540
caggatgtaa tgaagtggc ctatgcagac actttgcca atgtggtata tggctctact 600
gccattctgc tggcatggg ogtggagta atgttcatct ccttgtctta tttcttgata 660
atacgaacgg ttctgcaact gccttccaag tcagaggggg ccaaggcctt tggaaacctgt 720
gtgtcacaca ttggtgtggt actgccttc tatgtgcac ttattggcct ctacgttcta 780
caccgctttg gaacagcct tcatccatt gtgcgtgtt tcatgggtga catctacctg 840
ctgctgcttc ctgtrcatca tcccatcctc tatggtgcca aaaccaaaac gatcagaaca 900
cgggtgctgg ctatgttcaa gatcagctgt gacaaggact tgcaggctgt gggaggcaag 960
tga

```

<210> 527

<211> 320

<212> PRT

<213> Homo sapiens

<400> 527

305

310

315

320

<210> 528
 <211> 20
 <212> DNA
 <213> Homo Sapien

<400> 528
 actatggtcc agaggctgtg

20

<210> 529
 <211> 20
 <212> DNA
 <213> Homo Sapien

<400> 529
 atcacctatg tgcgcctct

20

<210> 530
 <211> 1852
 <212> DNA
 <213> Homo sapiens

<400> 530

```

ggcaccagaa ttaaaaccct cagcaaaaca ggcatagaag ggacatacct taaagtaata 60
aaaaccacct atgacaagcc cacagccaac ataatactaa atggggaaaa gttagaagca 120
tttccctctga gaactgcaac aataaataca aggatgctgg attttgtcaa atgccttttc 180
tgtgtctgtt gagatgctta tgtgactttg cttttaattc tgtttatgtg attatcacat 240
ttatctgactt gctgtgttta gaccggaaga gctgggtgtt ttctcaggag ccaccgtgtg 300
ctgcggcagc ttgcgggataa cttgaggttg catcartggg gaagaaacac aytctgtccc 360
gtggcgctga tggctgagga cagagcttca gctgtggcttc tctgogactg gcttctctgg 420
ggagtctcttc ctccatagtt catccatatt gctccagagg aaaattatat tttttgttta 480
tggatgaaga gtattacgtt gtgcagatat actgcagtgt cttcctctct tgatgtgtga 540
ttgggtaggt tccaccatgt tgcgcagat gacatgattt cagtacctgt gtctggtctga 600
aaagtgtttt ttgtgaaat gatattgttg tttctggatc tcatcctctg tgggtggaca 660
gctttctcca ctttgcctga agtgacctgc tgtccagaag tttgatggct gaggagtata 720
ccatogtga tgcctcttct atttctctga tttcttctct cctggatgga cagggggagc 780
ggcaagagca acgtgggcac ttctggagac cacaagact cctctgtgaa gacgcttggg 840
agcaagaggt gcaagtgggt ctgcactgct tccccctgct gcagggggag cggcaagagc 900
aacgtggtcg cttggggaga ctacgatgac agoccttcca tggatccag gtaccacgtc 960
catgggaga atctgggaca gctccacaga gctgcctggt ggggtaaagt cccagaaaag 1020
gatctcatcg tcatgctcag ggacaaggat gtgaacaaga gggacaagca aaagaggact 1080
gctctacatc tggcctctgc caatgggaat tcagaagtag taaaactcgt gctggacaga 1140
ogatgtcaac ttaattgtct tgacaacaaa aagaggacag ctctgacaaa ggcctgacaa 1200
tgccagggaag atgaatgtgc gttaatgttg ctggaacatg gcactgatcc aaatatcca 1260
gatgagtatg gaaataccac tctacactat gctgtctaca atgaagataa attaatggcc 1320
aaagcactgc tcttatacgg tctgatata gaatcaaaaa acaagcatgg cctcacacca 1380
ctgctacttg gtatacatga gcaaaaacag caagtgggtga aatttttaat caagaaaaaa 1440
gogaattctaa atgcgctgga tagatatgga agaactgctc tcatacttgc tctatgttgt 1500
ggatcagcaa gtatagtcag cctctacttt gagcaaaatg ttgatgtatc ttctcagat 1560
ctggaaagac ggcagagag tatgtgttt ctagtcatra tcatgtaatt tgcagttac 1620
ttcttgacta caaagaaaaa cagatgttaa aaatctcttc tgaabacagc aatccagaac 1680
aagacttaaa gctgacatca gaggaagagt cacaagggt taaaggaagt gaaaacagcc 1740
agccagagct agaagattta tggctattga agaagaatga agaacacgga agtactcatg 1800
tgggattccc agaaaacctg actaacggtg cctgtgctgg caatggtgat ga 1852

```

<210> 531
 <211> 879

<212> DNA

<213> Homo sapiens

<400> 531

```

atgcaccttt catttccctgc atttcttctt cctctggatgg acaggggggag cggcaagagc 60
aacgtgggca cttctggaga ccacaacgac tctctgtga agacgcttgg gagcaagagg 120
tgcaagtggg gctgccactg ctccccctgc tgcaggggga gcggcaagag caacgtgggc 180
gcttggggag actacgctga cagcgcttcc atggatccca ggtaccacgt ccatggagaa 240
gatctggaca agctccacag agctgcttgg tggggtaaag tcccagaaa ggtctctcgc 300
gtcatgctca gggacacgga tgtgaacaag agggacaagc aaaagaggac tgctctacat 360
ctggcctctg ccaatgggaa ttcagaagta gtaaaactcg tgctggacag acgatgtcaa 420
cttaatgtcc ttgacaacaa aaagaggaca gctctgacaa aggcctgaca atgccaggaa 480
gatgaatgtg cgttaatgtt gctggaacct ggcactgctc caataattcc agatgagtat 540
ggaaatacca ctctacacta tctgtctctc aatgaagata aattaatggc caagcactg 600
ctcttatacy gtgctgatat cgaatcaaaa aacaagcatg gcttcacacc actgctactt 660
ggtatacatg agcaaaaaca gcaagtgggt aattttttta tcaagaaaaa agcgaattta 720
aatgcgctgg atagatatgg aagaactgct ctcatatttg ctgtatgttg tggatcagca 780
agtatagtca gccctctact tgagcaaaat gttgatgtat ctctcaaga tctggaaaga 840
oggccagaga gtatgctgtt tctagtcatc atcatgtaa 879

```

<210> 532

<211> 292

<212> PRT

<213> Homo sapiens

<400> 532

```

Met His Leu Ser Phe Pro Ala Phe Leu Pro Pro Trp Met Asp Arg Gly
      5                      10                      15

Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp His Asn Asp Ser Ser
      20                      25                      30

Val Lys Thr Leu Gly Ser Lys Arg Cys Lys Trp Cys Cys His Cys Phe
      35                      40                      45

Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val Val Ala Trp Gly Asp
      50                      55                      60

Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr His Val His Gly Glu
      65                      70                      75                      80

Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg
      85                      90                      95

Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Arg Asp
      100                     105                     110

Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser
      115                     120                     125

Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys Gln Leu Asn Val Leu
      130                     135                     140

Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala Val Gln Cys Gln Glu
      145                     150                     155                     160

Asp Glu Cys Ala L u Met L u Leu Glu His Gly Thr Asp Pro Asn Ile
      165                     170                     175

```

Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Val Tyr Asn Glu
 180 185 190

Asp Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu
 195 200 205

Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Ile His Glu
 210 215 220

Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu
 225 230 235 240

Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys
 245 250 255

Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu Glu Gln Asn Val Asp
 260 265 270

Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu Ser Met Leu Phe Leu
 275 280 285

Val Ile Ile Met
 290

<210> 533
 <211> 801
 <212> DNA
 <213> Homo sapiens

<400> 533
 atgtacaagc ttcaagtgcac caactgtgct acaaatggag ccacagagag gaaacaagca 60
 gaaggctcag gacgagggtg tgcgtgctct tgggtctctc aatccatgcc tcagggtctcc 120
 tatgccactg cagcattctt ggttgccaa aggcacacca caggccatct tgagaaggag 180
 tttatgttcc actgcagaaa gcagccagga tcaccatcca ggggacttgg tcttctgttg 240
 ccttggtccag acatagaatt tgtgccaaag caggacaagg tcaactcagag cagcgtgtta 300
 gtacctcaaa tctgtgcttg ccagacaagg ccaaactggc tcaatgagca accagccacc 360
 tctgcagggg tgcgtcttga ggaggtggac cagccacca ccttaccag tcaaggaggt 420
 ggatggccat gtccccacag cctgagtggc tggcacttga tggctgat atgcaaggcc 480
 ttgggaaaag cagatggccc ttggccctac cttttgtta gaagaactga tgttccatgt 540
 cctgcagcga gtgaggttgg tggctgtgcc ccagctcct ggcacacct cgcagaggtg 600
 actggttgc ttttgagccc tcttagcctt gccagcatg cacaagctc agtgctacta 660
 ctgtgctaca aatggagcca tataggggaa acgagcagcc atctcaggag caaggtgtat 720
 gctgccttbg ggggtccag tccctgctc aaggtcttta tgtcactgtg ggccttcttg 780
 ttgccaaagag gcagaccata g 801

<210> 534
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 534
 Met Tyr Lys Leu Gln Cys Asn Asn Cys Ala Thr Asn Gly Ala Thr Glu
 5 10 15

Arg Lys Gln Ala Ala Gly Ser Gly Ala Gly Tyr Ala Leu Pro Ser Ala
 20 25 30

Leu Gln Ser Met Pro Gln Gly Ser Tyr Ala Thr Ala Arg Phe Leu Val
 35 40 45
 Ala Lys Arg Pro Thr Thr Gly His Leu Glu Lys Glu Phe Met Phe His
 50 55 60
 Cys Arg Lys Gln Pro Gly Ser Pro Ser Arg Gly Leu Gly Leu Leu Trp
 65 70 75 80
 Pro Trp Pro Asp Ile Glu Phe Val Pro Arg Gln Asp Lys Leu Thr Gln
 85 90 95
 Ser Ser Val Leu Val Pro Gln Ile Cys Ala Cys Gln Thr Arg Pro Asn
 100 105 110
 Trp Leu Asn Glu Gln Pro Ala Thr Ser Ala Gly Val Arg Leu Glu Glu
 115 120 125
 Val Asp Gln Pro Pro Thr Leu Pro Ser Gln Gly Ser Gly Trp Pro Cys
 130 135 140
 Ser His Ser Leu Ser Gly Cys His Leu Met Ala Asp Ile Ala Lys Ala
 145 150 155 160
 Leu Gly Lys Ala Asp Gly Pro Trp Pro Tyr Leu Phe Val Arg Arg Thr
 165 170 175
 Asp Val Pro Cys Pro Ala Ala Ser Glu Val Gly Gly Cys Ala Pro Ser
 180 185 190
 Ser Trp His Thr Leu Ala Glu Val Thr Gly Cys Ser Leu Ser Pro Leu
 195 200 205
 Ser Leu Ala Gln His Ala Gln Ala Ser Val Leu Leu Leu Cys Tyr Lys
 210 215 220
 Trp Ser His Ile Gly Glu Thr Ser Ser His Leu Arg Ser Lys Val Tyr
 225 230 235 240
 Ala Ala Phe Gly Gly Ser Ser Pro Cys Leu Lys Gly Leu Met Ser Leu
 245 250 255
 Trp Ala Ser Trp Leu Pro Arg Gly Arg Pro
 260 265

<210> 535

<211> 6082

<212> DNA

<213> Homo sapiens

<400> 535

cctccactat tacagcttat aggaattac aatccacttt acaggcctca aaggttcatt 60
 ctggccyagc ggacaggcgt ggccggccggg gccccagcat ccttgcttga ggtccaggag 120
 cggagcccgcc ggccactgcc gctgactcag cgcgaccccg gcccgcgccc gcccgcccg 180
 gcaagatgct gccctgtac caggaggtga agcccaacc gctgcaggac gcgaacctct 240
 gctcagcgt gttctctcgg tggctcaatc ccttgcttaa aattggccat aaacggagat 300

tagaggaaga tgatatgtat tcagtgctgc cagaagacog ctacacagcac cttggagagg 360
 agttgcaagg gttctgggat aaagaagttt taagagctga gaatgacgca cagaagcctt 420
 ctttaacaag agcaatcata aagtggtact ggaaatctta tttagttttc ggaattttta 480
 cgttaattga ggaagtgcc aaagtaatcc agcccatatt ttgggaaaaa attatttaatt 540
 attttgaaaa ttatgatccc atggattctg tggctttgaa cacagcgtag gcctatgcca 600
 cgggtgctgac tttttgcaag ctcatcttg ctatactgca tcaacttatat ttttatcaag 660
 ttcaagtgtg tgggatgagg ttacgagtag ccagtgtcca tatgatttat oggaaggcac 720
 ttctgtctag taacatggcc atggggaaaga caaccacagg ccagatagtc aatctgctgt 780
 ccactgatgt gaacaagttt gatcaggtga cagtgttctt acacttctct tgggcaggac 840
 cactgcaggg gatcgagtg actgccctac tctggatgga gataggaata tctgacctg 900
 ctgggatggc agttctaact attctctctc ccttgcaaag ctgttttggg aagttgtctt 960
 catcactgag gagtataact gcaacttcca oggatgccag gatcaggacc atgaatgaag 1020
 ttataactgg tataaggata ataaaaatgt acgctggga aaagtcattt tcaaatctta 1080
 ttaccaaatt gagaaagaag gagatttcca agattctgag aagttctctc ctccagggga 1140
 tgaatttggc ttctgttttc atgcaagca aatcatcgt gtttgtgacc ttcaaccact 1200
 acgtgctcct oggcagtggt atcacagcca gccgctgtt cgtggcagtg acgctgtatg 1260
 gggctgtgct gctgacgggt acctctctct tccctcagc cattgagagg gtgtcagagg 1320
 caatcgtag catccgaaga atccagacct ttttgcact tgatgagata tcacagcgca 1380
 accgtcagct gccgtcagat ggtaaaaaga tgggtgcagt gcaggatttt actgcttttt 1440
 gggataaggc atcagagacc caactctac aaggccttct ctttactgtc agacctggcg 1500
 aattgtttag tgtgtctggc ccgctgggag cagggaagtc atcactgtta agtgcctgtc 1560
 tccgggaatt ggccccaagt cagggctggt tcagcgtgca tggagaatt gcctactgtt 1620
 ctacgagcc ctgggtgttc togggaactc tgaggagtaa tattttattt gggagaatat 1680
 acgaaaagga acgatatgaa aaagtcataa aggtctgtgc tctgaaaaag gatttaccg 1740
 tgttggagga tgggtgatctg actgtgatag gagatcgggg aaccacgctg agtggagggc 1800
 agaaagcagc ggtaaacctt gcaagagcag tgtatcaaga tcttgacatc tatctctg 1860
 acgatcctct cagtgcagta gatgcggaag ttacgagaca cttgttctga ctgtgtattt 1920
 gtcaaatctt gcattgaga atcaaatctt tagtgaactc tcagttgcag tactcaag 1980
 ctgcaagtrc gattctgata ttgaaagatg gtaaaatggt gcagaagggt acttacactg 2040
 agttcctaaa atctggtata gattttggtt cctttttaa gaaggataat gaggaaagt 2100
 aacaacctcc agttccagga actccacac taaggaatcg tacttctca gacttctgg 2160
 tttggtctca acaatctctc agacctctc tgaagatgg tgcctcggag agccaagata 2220
 cagagaatgt cccagttaca ctatcagagg agaaccgttc tgaaggaaaa gttggttttc 2280
 aggcctataa gaattacttc agagctgggt ctactggat tgtcttcatt tctcttattc 2340
 tcttaaacac tgcagctcag gttgcctatg taactcaaga tgggtggctt tcaactggg 2400
 caaacaaara aagtatgcta aatgtcactg taaaaggagg aggaatgta accgagaagc 2460
 tagatcttaa ctggtactta ggaatttatt caggtttaac tgtagctacc gttctttttg 2520
 gcatagcaag atctctattg gtattctaac tcttctgtaa ctcttcacaa actttgcaca 2580
 acaaaatggt tgagtcaatt ctgaaagctc cggatattat ctttgataga aatccaaag 2640
 gaagaatttt aaatcgtttc tccaaagaca ttggacactt ggatgatttg ctgctgctga 2700
 cgtttttaga tttcatccag acattgctac aagtgttgg tgtggtctct gtggctgtg 2760
 cgtgattcc ttggatcgca ataccttgg tccctctgg aatcattttc attttctctc 2820
 ggcgatattt tttggaacg tcaagagatg tgaagcgctt ggaatctaca actcggagtc 2880
 cagtgttttc ccactgttca tcttctctcc aggggtctct gaccatccgg gcatacaag 2940
 cagaagagag gtgtcaggaa ctggttgatg cacaccagga tttacattca gaggcttgg 3000
 tcttgttttt gacaacgtcc cgtggttctc cgtccgctct ggtgccatc tgtgccatgt 3060
 ttgtcatcat cgttgccttt gggctccctg tcttggcaaa aactctggat gccgggcagg 3120
 ttggtttggc actgtctctt gccctcagc tcatgggat gtttcagtg ggtgttcgac 3180
 aaagtctga agttgagaat atgatgatct cagtgaaag ggtcattgaa tacacagacc 3240
 ttgaaaaaga agtcccttgg gaatatcaga accgcccacc accagcctgg cccatgaa 3300
 gagtgataat ctttgacaat gtgaacttca tgtacagtc aggtgggctt ctggtactga 3360
 agcatctgac agcatcatt aaatcacaag aaaaggttgg cattgtggga agaaccggag 3420
 ctggaaaaaag tccctctatc tcagcccttt ttagattgtc agaaccggaa ggtaaaaatt 3480
 ggattgataa gatcttgaca actgaatttg gacttcacga ttaagggaag aaaaatgtca 3540
 tcatacctca ggaactgttt ttgttactg gaacaatgag gaaaaacctg gatccctcta 3600
 atgagcacac ggtagggaa ctgtggaatg ccttacaaga ggtacaactt aaagaaacca 3660
 ttgaagatct tctgtgtaa atggaactg aattagcaga atcaggatcc aatttttagt 3720
 ttggacaaaag acaactgggtg tgccttgcca gggcaattct caggaaaaat cagatatga 3780


```

ttattgatga agogacggca aatgtggatc caagaactga tgagttaata caaaaaaat 3840
ccgggagaa tttgccact gcaccgtgct aaccattgca caccagattga acaccattat 3900
tgacagcgac aagataatgg ttttagattc aggaagactg aaagaatatg atgagccgta 3960
tgttttgctg caaataaag agagcctatt ttacagatg gtgcaacaac tgggcaaggc 4020
agaagccgct gccctcactg aaacagcaaa acaggtatac ttcaaaagaa attatccaca 4080
tattggtcac actgaccaca tggttacaaa cacttccaat ggacagccct cgaccttaac 4140
tattttcgag acagcactgt gaatccaaac aaaaatgtcaa gtccgttccg aaggcatttg 4200
ccactagttt ttggactatg taacacacat tgtacttttt ttacttttg caacaaatat 4260
ttatacatac aagatgctag ttcatattgaa tattttctcc aacttatcca aggatctcca 4320
gtcttaacaa aatggtttat ttttatttaa atgtcaatag ttgtttttta aaatccaaat 4380
cagaggtgca ggccaccagt taatgcccgt ctatcaggtt ttgtgcctta agagactaca 4440
gagtcacaaag cactttttta aggagtagga cagaggttgc acaggttttt gtgtgtgttt 4500
ttattgcccc caaaattaca tgttaatttc cacttatata agggattcta ttacttgaa 4560
gacttgaag ttgccatttt gtctcattgt tttctttgac ataactagga tccattattt 4620
cccttgaagg cttctgttta gaaaatagta cagttacaac caataggaac aacaaaaga 4680
aaaagtgtgt gacattgtag tagggagtgt gtacccctta ctcacctca aaaaaaaa 4740
tggtatcatg gttaaaggat agaagggcaa tttttatca tatgttctaa aagagaagga 4800
agagaaaaata ctactttctc aaaaatggaag cctttaaagg tgctttgata ctgaaggaca 4860
caaatgtgac cgtccatcct ccttttagag tgcattgact ggacaaggta actgttgag 4920
ttttagactc agcattgtga cacttcccaa gaagggccaa cctctaaccg acattcctga 4980
aatacgtggc attattcttt tttygatttc tcatttatgg aaggctaacr ctctgttgac 5040
tgtaagccct ttggtttggg ctgtattgaa atcctttcta aattgcatga ataggctctg 5100
ctaactgtat gagacaaact gaaaattatt gcaagcattg actataatta tgcagtaagt 5160
tctcaggatg catccagggg ttcattttca tgagcctgtc caggttagtt tactcctgac 5220
cactaatagc attgtcattt gggctttctg ttgaatgaat caacaaacca caatacttcc 5280
tggaaccttt tgaactttat ttgaactatg agtctttaat tttcctgat gatggtggct 5340
gtaatatgtt gagttcagtt tactaaaggt tttactatta tggtttyaag tggagtctca 5400
tgacctctca gaataagggt tcaactccct gaaattgcat atatgtatat agacattgca 5460
aogtgtgcat ttgtttgtat acatatattt gtccctcgta tagcaagttt ttgtctcacc 5520
agcagagagc aacagatgtt ttattgagtg aagccttaa aagcacacac cacacacagc 5580
taactgcca aatacattga ccgtagtagc tgttcaactc ctagtactta gaatacacg 5640
tatggttaat gttcagtcra acaaacacca cacagtaaat gtttattaat agtcatgggt 5700
cgtattttag gtgactgaaa ttgcaacagt gatcataatg aggtttgtta aaatgatagc 5760
tatattcaaa atgtctatat gtttatttgg acttttgagg ttaaagacag tcatataaac 5820
gtcctgtttc gtgttttaag ttatcataga attttttaat gaaactaaat tcaattgaa 5880
taaatgatag ttttcatctc caaaaaaaa aaaaaaaagg gggccgctc gagtctagag 5940
ggcccgttta aaccogctga tcagcctoga ctgtgccttc tagttgccag ccactctgtt 6000
tttgccctc ccccgctgct tcttgacctc tggaggtgc cactccact gtcccttctc 6060
aataaataga ggaattgca tc 6082

```

<210> 536

<211> 6140

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (4535)

<223> n=A,T,C or G

<400> 536

```

cagtgggcca gtctcagctc actgagcct ccaactcctg tgttcaagca gtccctcctg 60
ctcagccacc agactagcag gtctccccg cctctttctt ggaaggacac ttgccattgg 120
atttaggacc cacttggata atccaggatc atgtcttcc tccaacatcc ttagtttaat 180
tcattgtgca aatacccttt tcccaaatga cattcaattc ttaccagga aaggtygctc 240
aatcccttgt ttaaaattgg ccataaacgg agatttagag aagatgatat gtattcagt 300
ctgccagaag accgctcaca gcaccttggg gaggagtgc aagggtctct ggataaagaa 360
gttttaagag ctgagaatga cgcacagaag ccttctctta caagagcaat cctaaagtgt 420

```

tactggaaat cttattctagt tttgggaatt tttacgttaa ttgaggaaag tgccaaagta 480
atccagccca tatttttggg aaaaattatt aattattttg aaaattatga tcccatggat 540
tctgtggctt tgaacacagc gtacgectat gccacgggtg tgactttttg cagctcatt 600
ttgggtatcac tgcatacatt atatttttat caggttcagt gtgctgggat gagggtacga 660
gtagccatgt gccatatgat ttatoggaag gcacttcgtc ttagtaacat ggccatgggg 720
aagacaacca caggccagat agtcaatctg ctgtccaatg atgtgaacaa gtttgatcag 780
gtgacagtgt tcttacatt cctgtgggca ggaacactgc aggcgatgc agtgactgcc 840
ctactctgga tggagatagg aatatcgtgc cttgtggga tggcagttct aatcattctc 900
ctgcccttgc aaagctgttt tgggaagtgt ttctcatcac tgaggagtaa aactgcaact 960
ttcaoggatg ccaggatcag gaccatgaat gaagttataa ctggtataag gataataaaa 1020
atgtacgctt gggaaaagtc attttcaaat cttattacca atttgagaaa gaaggagatt 1080
tccaagattc tgagaagttc ctgcctcagg gggatgaatt tggcttcgtt tttcagtgca 1140
agcaaatca tegtgtttgt gaccttcacc acctacgtgc tctcggcag ctgtatcaca 1200
gccagccgct tgttcgtggc agtgacgtg tatggggctg tgcggctgac ggttacctc 1260
ttcttcccc cagccattga gagggtgtca gaggcaatcg tcagcatccg aagaatccag 1320
acctttttgc taattgatga gatatacag cgaacacgtc agctgcctc agatggttaa 1380
aagatggtgc atgtgcagga ttttactgct ttttgggata aggcacaga gaccccaact 1440
ctacaaggcc ttctctttac tgcagacct ggcgaattgt tagctgtggt cggccccgtg 1500
ggagcaggga agtcatcact gtttaagtgc gtgctcgggg aattggcccc aagtccagg 1560
ctgttcagcg tgcattggaag aattgcctat gtgtctcagc agccctgggt gttctcggga 1620
actctgagga gtaattttt atttgggaag aaatacgasa aggaacgata tgaaaaagtc 1680
ataaaggctt gtgtctctgaa aaaggattta cagctgttgg aggatggtga tctgactgtg 1740
ataggagatc ggggaaccac gctgagtga cagcggttaa ccttgcaaga 1800
gcagtgtatc aagatgttga catctatctc ctggagatc ctctcagtc agtagatgc 1860
gaagttagca gacacttgtt cgaactgtgt atttgtcaa ttttgcata gaagatcaca 1920
atcttagtga ctcatcagtt gcagtacctc aaagctgcaa gtcagattct gatattgaaa 1980
gatgttaaaa tggtcagaa ggggaactac actgagttcc taaaatctgg tatagatttt 2040
ggctcccttt taaagaagga taatgaggaa agtgaacac ctccagttcc aggaactccc 2100
acactaagga atogtacct ctccaggtct cgggtttgg ctcaacaatc ttctagacc 2160
tctctgaaa agtgtgtctt ggagagccaa gatacagaga atgtccagat taactatca 2220
gaggagaacc gttctgaagg aaaagtgtgt tttcaggcct aaagaatta ctccagatc 2280
ggtgtcactt ggattgtctt cattttcctt atttctctaa acactgcagc tcaggttgc 2340
tatgtcttc aagattgggt gctttcatac tgggcaacaa aacaaagat gctaaatgtc 2400
actgtaaatg gaggagaaa tgaaccagag aagctagatc ttaactggtt cttagggaatt 2460
tattcaggtt caactgtagc taccgttctt tttggcatag caagatctct attggtatc 2520
tacgtccttg ttaactcttc acaaaacttt cacaacaaaa tgtttgagtc aattctgaaa 2580
gtccoggtat cattctttga tagaatcca ataggaaaga ttttaaato tttctccaaa 2640
gacatggac acttggatga tttgtgtgcg ctgacgtttt tagatttcat ccagacattg 2700
ctacaagtgg ttgggtgtgt ctctgtggct gtggccgtga ttccttggat cgaataccc 2760
ttgggtcccc ttggaatcat ttccattttt ctccggcgat attttttggg aacgtcaaga 2820
gatgtgaagc gctgggaatc tacaactcgg agtccagtgt ttcccaact gtcatctct 2880
ctccaggggc tctggacat cggggcatc aaagcagaag agagggtga ggaactgttt 2940
gatgcacacc aggatttaca ttccagggct tggttcttgt ttttgacaac gtcccgtgg 3000
ttogccgtcc gtctggatgc catctgtgoc atgtttgtca tcatcgttgc ctttgggtcc 3060
ctgattctgg caaaaaactct ggatgcgggg caggtttggt tggcactgtc ctatgcctc 3120
acgtctatgg ggatgttca gtgggtgtgt cgaacaaagt ctgaagttga gaatatgat 3180
atctcagtag aaagggtcat tgaatacaca gaccttgaag aagaagcacc ttgggaatat 3240
cagaacagcc caccacagc ctggcccat gaaggagtga taatcttga caatgtgaac 3300
ttcatgtaca gtccaggtgg gcctctggtc ctgaagratc tgacagcact cattaaatca 3360
caagaaaagg ttggcattgt ggggaagacc ggagctggaa aaagttccct catctcagcc 3420
ctttttagat tgtcagaacc cgaaggtaa atttggattg ataagatctt gacaactgaa 3480
attggaactc acgattttag gaagaaaatg tcaatcatab ctccaggaaac bgttttgttc 3540
actggaacaa tgaggaaaaa cctggatccc tttaatgagc acacggatga ggaactgtgg 3600
aatgacctac aagaggtaca acttaagaaa accattgaag atcttctctg taaaatggat 3660
actgaattag cagaatcagg atccaatttt agtgttggac aaagacaact ggtgtgctt 3720
gccagggcaa ttctcaggaa aaatcagata tctgattatg atgaagcgac ggcaaatgtg 3780
gatccaaaga ctgatgagtt aatacaaaaa aaatccggg agaaatttgc ccactgcac 3840
gtgctaacca ttgcacacag attgaacacc attattgaca ggcacaagat aatggtttta 3900

```

gattcaggaa gactgaaaga atatgatgag cegtatggtt tcttgcaaaa taaagagagc 3960
ctattttaca agatgggtgca acaactgggc aaggcagaag cegctgceet cactgaaara 4020
gcaaaacaga gatgggggtt caccatgttg gccaggctgg tctcaaaactc ctgacctcaa 4080
gtgatccacc tgccttgggc tcccaaaactg ctgagattac aggtgtgagc caccacgccc 4140
agcctgagta tacttcaaaa gaaattatcc acataattgg cactctgacc acatgggttac 4200
aaacacttcc aatggacagc cctcgacctt aactatttcc gagacagcac tgtgaatcca 4260
accaaaaatgt caagtccgtt ccgaaggcat ttgccactag tttttggact atgttaacca 4320
cattgtacttt ttttttactt tggcaacaaa tatttataca tacaagatgc tagttcattt 4380
gaatatttct cccaacttat ccaaggatct ccagctctaa caaatgggtt tatttttatt 4440
taaatgtcaa tagtkgkttt ttaaaatcca aatcagaggc gcaggccacc agttaaatgc 4500
cgtctatcag gttttgtgcc ttaagagact acagnagtea gaagctcatt tttaaaggag 4560
taggacagag ttgtcacagg tttttgttgg tgtttktatt gcccccaaaa ttacatgtta 4620
atttccattt atatcagggg attctattta ctggaagact gtgaagtgc cattttgtct 4680
cattgttttc ttgacatam ctaggatcca ttatttcccc tgaaggcttc ttgkagaaaa 4740
tagtctactt accaaccata ggaactamca aaaaagaaaa gtttgtgaca ttgttagtag 4800
gagtgtgtac ccttactccc ccatcaaaaa aaaaaatgga taratggta aaggatagaa 4860
gggcaatatt ttatcatatg ttctaaaaga gaagggaagag aaaatactac tttctcaaaa 4920
tggaaagccc taaaggtgct ttgatactga aggcacaaaa tgtgacogtc catctctctt 4980
tagagttgca tgacttggac acggttaactg ttgcagtttt agactcagca ttgtgacact 5040
tcccaagaag gccaaacctc taaccgacat tctgaaata cgtggcatta ttcttttttg 5100
gatttctcat ttaggaaggc taacctcttg ttgamtgtam kctttttggt ttgggctgta 5160
ttgaaatctt ttctaatatg catgaatagg ctctgttaac cgtgatgaga caaactgaaa 5220
attattgcaa gcattgacta taattatgca gtacgttctc aggatgcac caggggttca 5280
ttttcatgag cctgtccagg ttatgttact cctgaccact aatagcattg tcatttgggc 5340
ttctgttga atgaatcaac aaaccacaat acttcttggt accctttgta ctttatttga 5400
actatgagtc tttaattttt cctgatgatg gtggtgttaa tatgttgagt tcaatttact 5460
aaaggtttta ctattatggt ttgaaggagg tctcatgacc tctcagaaaa ggtgcacctc 5520
cctgaaattg catatatatg catagacatg cacacgtgtg cattgtttg tatacatata 5580
tttgtcttcc gtatagcaag ttttttgcct atcagcagag agcaacagat gttttattga 5640
gtgaagcctt aaaaagcaca caccacacac agctaaactgc caaaatcacat tgaccgtagt 5700
agctgttcaa ctctagtagc ttgaaataac acgtatgggt aatgttcagt ccaacaaacc 5760
acacacagta aatgtttatt aatagtcabg gttcgtattt taggtgactg aaattgcaac 5820
agtgatcata atgaggtttg ttaaatgat agctatatcc aaaaatgtcta tatgtttatt 5880
tggacttttg aggttaaaaga cagtcataata aacgtcctgt ttctgtttta atgttatcat 5940
agaattttct aatgaaacta aattcaattg aaataaatga tagttttcat ccccaaaaaa 6000
aaaaaaaaag gggggccogc ttaggtctag agggcccggt ttaaacccgc tgatcagcct 6060
cgactgtgac ttctagttgc cagccatctg ttgtttggcc ctcccccggt ccttcttga 6120
ccctggaagg ggccactccc

```

<210> 537

<211> 1228

<212> PRT

<213> Homo sapiens

<400> 537

```

Met Leu Pro Val Tyr Gln Glu Val Lys Pro Asn Pro Leu Gln Asp Ala
      5                      10                      15

```

```

Asn Leu Cys Ser Arg Val Phe Phe Trp Trp Leu Asn Pro Leu Phe Lys
      20                      25                      30

```

```

Ile Gly His Lys Arg Arg Leu Glu Glu Asp Asp Met Tyr Ser Val Leu
      35                      40                      45

```

```

Pro Glu Asp Arg Ser Gln His Leu Gly Glu Glu Leu Gln Gly Phe Trp
      50                      55                      60

```

```

Asp Lys Glu Val Leu Arg Ala Glu Asn Asp Ala Gln Lys Pro Ser Leu

```

65	70	75	80
Thr Arg Ala Ile Ile Lys Cys Tyr Trp	Lys Ser Tyr Leu Val Leu Gly		
85	90	95	
Ile Phe Thr Leu Ile Glu Glu Ser Ala Lys Val Ile Gln Pro Ile Phe			
100	105	110	
Leu Gly Lys Ile Ile Asn Tyr Phe Glu Asn Tyr Asp Pro Met Asp Ser			
115	120	125	
Val Ala Leu Asn Thr Ala Tyr Ala Tyr Ala Thr Val Leu Thr Phe Cys			
130	135	140	
Thr Leu Ile Leu Ala Ile Leu His His Leu Tyr Phe Tyr His Val Gln			
145	150	155	160
Cys Ala Gly Met Arg Leu Arg Val Ala Met Cys His Met Ile Tyr Arg			
165	170	175	
Lys Ala Leu Arg Leu Ser Asn Met Ala Met Gly Lys Thr Thr Thr Gly			
180	185	190	
Gln Ile Val Asn Leu Leu Ser Asn Asp Val Asn Lys Phe Asp Gln Val			
195	200	205	
Thr Val Phe Leu His Phe Leu Trp Ala Gly Pro Leu Gln Ala Ile Ala			
210	215	220	
Val Thr Ala Leu Leu Trp Met Glu Ile Gly Ile Ser Cys Leu Ala Gly			
225	230	235	240
Met Ala Val Leu Ile Ile Leu Leu Pro Leu Gln Ser Cys Phe Gly Lys			
245	250	255	
Leu Phe Ser Ser Leu Arg Ser Lys Thr Ala Thr Phe Thr Asp Ala Arg			
260	265	270	
Ile Arg Thr Met Asn Glu Val Ile Thr Gly Ile Arg Ile Ile Lys Met			
275	280	285	
Tyr Ala Trp Glu Lys Ser Phe Ser Asn Leu Ile Thr Asn Leu Arg Lys			
290	295	300	
Lys Glu Ile Ser Lys Ile Leu Arg Ser Ser Cys Leu Arg Gly Met Asn			
305	310	315	320
Leu Ala Ser Phe Phe Ser Ala Ser Lys Ile Ile Val Phe Val Thr Phe			
325	330	335	
Thr Thr Tyr Val Leu Leu Gly Ser Val Ile Thr Ala Ser Arg Val Phe			
340	345	350	
Val Ala Val Thr Leu Tyr Gly Ala Val Arg Leu Thr Val Thr Leu Phe			
355	360	365	
Phe Pro Ser Ala Ile Glu Arg Val Ser Glu Ala Ile Val Ser Ile Arg			
370	375	380	

Arg Ile Gln Thr Phe Leu Leu Leu Asp Glu Ile Ser Gln Arg Asn Arg
 385 390 395 400
 Gln Leu Pro Ser Asp Gly Lys Lys Met Val His Val Gln Asp Phe Thr
 405 410 415
 Ala Phe Trp Asp Lys Ala Ser Glu Thr Pro Thr Leu Gln Gly Leu Ser
 420 425 430
 Phe Thr Val Arg Pro Gly Glu Leu Leu Ala Val Val Gly Pro Val Gly
 435 440 445
 Ala Gly Lys Ser Ser Leu Leu Ser Ala Val Leu Gly Glu Leu Ala Pro
 450 455 460
 Ser His Gly Leu Val Ser Val His Gly Arg Ile Ala Tyr Val Ser Gln
 465 470 475 480
 Gln Pro Trp Val Phe Ser Gly Thr Leu Arg Ser Asn Ile Leu Phe Gly
 485 490 495
 Lys Lys Tyr Glu Lys Glu Arg Tyr Glu Lys Val Ile Lys Ala Cys Ala
 500 505 510
 Leu Lys Lys Asp Leu Gln Leu Leu Glu Asp Gly Asp Leu Thr Val Ile
 515 520 525
 Gly Asp Arg Gly Thr Thr Leu Ser Gly Gly Gln Lys Ala Arg Val Asn
 530 535 540
 Leu Ala Arg Ala Val Tyr Gln Asp Ala Asp Ile Tyr Leu Leu Asp Asp
 545 550 555 560
 Pro Leu Ser Ala Val Asp Ala Glu Val Ser Arg His Leu Phe Glu Leu
 565 570 575
 Cys Ile Cys Gln Ile Leu His Glu Lys Ile Thr Ile Leu Val Thr His
 580 585 590
 Gln Leu Gln Tyr Leu Lys Ala Ala Ser Gln Ile Leu Ile Leu Lys Asp
 595 600 605
 Gly Lys Met Val Gln Lys Gly Thr Tyr Thr Glu Phe Leu Lys Ser Gly
 610 615 620
 Ile Asp Phe Gly Ser Leu Leu Lys Lys Asp Asn Glu Glu Ser Glu Gln
 625 630 635 640
 Pro Pro Val Pro Gly Thr Pro Thr Leu Arg Asn Arg Thr Phe Ser Glu
 645 650 655
 Ser Ser Val Trp Ser Gln Gln Ser Ser Arg Pro Ser Leu Lys Asp Gly
 660 665 670
 Ala Leu Glu Ser Gln Asp Thr lu Asn Val Pro Val Thr Leu Ser Glu
 675 680 685

Glu Asn Arg Ser Glu Gly Lys Val Gly Phe Gln Ala Tyr Lys Asn Tyr
 690 695 700
 Phe Arg Ala Gly Ala His Trp Ile Val Phe Ile Phe Leu Ile Leu Leu
 705 710 715 720
 Asn Thr Ala Ala Gln Val Ala Tyr Val Leu Gln Asp Trp Trp Leu Ser
 725 730 735
 Tyr Trp Ala Asn Lys Gln Ser Met Leu Asn Val Thr Val Asn Gly Gly
 740 745 750
 Gly Asn Val Thr Glu Lys Leu Asp Leu Asn Trp Tyr Leu Gly Ile Tyr
 755 760 765
 Ser Gly Leu Thr Val Ala Thr Val Leu Phe Gly Ile Ala Arg Ser Leu
 770 775 780
 Leu Val Phe Tyr Val Leu Val Asn Ser Ser Gln Thr Leu His Asn Lys
 785 790 795 800
 Met Phe Glu Ser Ile Leu Lys Ala Pro Val Leu Phe Phe Asp Arg Asn
 805 810 815
 Pro Ile Gly Arg Ile Leu Asn Arg Phe Ser Lys Asp Ile Gly His Leu
 820 825 830
 Asp Asp Leu Leu Pro Leu Thr Phe Leu Asp Phe Ile Gln Thr Leu Leu
 835 840 845
 Gln Val Val Gly Val Val Ser Val Ala Val Ala Val Ile Pro Trp Ile
 850 855 860
 Ala Ile Pro Leu Val Pro Leu Gly Ile Ile Phe Ile Phe Leu Arg Arg
 865 870 875 880
 Tyr Phe Leu Glu Thr Ser Arg Asp Val Lys Arg Leu Glu Ser Thr Thr
 885 890 895
 Arg Ser Pro Val Phe Ser His Leu Ser Ser Ser Leu Gln Gly Leu Trp
 900 905 910
 Thr Ile Arg Ala Tyr Lys Ala Glu Glu Arg Cys Gln Glu Leu Phe Asp
 915 920 925
 Ala His Gln Asp Leu His Ser Glu Ala Trp Phe Leu Phe Leu Thr Thr
 930 935 940
 Ser Arg Trp Phe Ala Val Arg Leu Asp Ala Ile Cys Ala Met Phe Val
 945 950 955 960
 Ile Ile Val Ala Phe Gly Ser Leu Ile Leu Ala Lys Thr Leu Asp Ala
 965 970 975
 Gly Gln Val Gly Leu Ala Leu Ser Tyr Ala Leu Thr Leu Met Gly Met
 980 985 990
 Phe Gln Trp Cys Val Arg Gln Ser Ala Glu Val Glu Asn Met Met Ile

995	1000	1005
Ser Val Glu Arg Val Ile Glu Tyr Thr Asp Leu Glu Lys Glu Ala Pro 1010 1015 1020		
Trp Glu Tyr Gln Lys Arg Pro Pro Pro Ala Trp Pro His Glu Gly Val 1025 1030 1035 1040		
Ile Ile Phe Asp Asn Val Asn Phe Met Tyr Ser Pro Gly Gly Pro Leu 1045 1050 1055		
Val Leu Lys His Leu Thr Ala Leu Ile Lys Ser Gln Glu Lys Val Gly 1060 1065 1070		
Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser Leu Ile Ser Ala Leu 1075 1080 1085		
Phe Arg Leu Ser Glu Pro Glu Gly Lys Ile Trp Ile Asp Lys Ile Leu 1090 1095 1100		
Thr Thr Glu Ile Gly Leu His Asp Leu Arg Lys Lys Met Ser Ile Ile 1105 1110 1115 1120		
Pro Gln Glu Pro Val Leu Phe Thr Gly Thr Met Arg Lys Asn Leu Asp 1125 1130 1135		
Pro Phe Asn Glu His Thr Asp Glu Glu Leu Trp Asn Ala Leu Gln Glu 1140 1145 1150		
Val Gln Leu Lys Glu Thr Ile Glu Asp Leu Pro Gly Lys Met Asp Thr 1155 1160 1165		
Glu Leu Ala Glu Ser Gly Ser Asn Phe Ser Val Gly Gln Arg Gln Leu 1170 1175 1180		
Val Cys Leu Ala Arg Ala Ile Leu Arg Lys Asn Gln Ile Leu Ile Ile 1185 1190 1195 1200		
Asp Glu Ala Thr Ala Asn Val Asp Pro Arg Thr Asp Glu Leu Ile Gln 1205 1210 1215		
Lys Lys Ser Gly Arg Asn Leu Pro Thr Ala Pro Cys 1220 1225		
<210> 538		
<211> 1261		
<212> PRT		
<213> Homo sapiens		
<400> 538		
Met Tyr Ser Val Leu Pro Glu Asp Arg Ser Gln His Leu Gly Glu Glu 5 10 15		
Leu Gln Gly Phe Trp Asp Lys Glu Val Leu Arg Ala Glu Asn Asp Ala 20 25 30		
Gln Lys Pro Ser Leu Thr Arg Ala Ile Ile Lys Cys Tyr Trp Lys Ser 35 40 45		

Tyr Leu Val Leu Gly Ile Phe Thr Leu Ile Glu Glu Ser Ala Lys Val
 50 55 60
 Ile Gln Pro Ile Phe Leu Gly Lys Ile Ile Asn Tyr Phe Glu Asn Tyr
 65 70 75 80
 Asp Pro Met Asp Ser Val Ala Leu Asn Thr Ala Tyr Ala Tyr Ala Thr
 85 90 95
 Val Leu Thr Phe Cys Thr Leu Ile Leu Ala Ile Leu His His Leu Tyr
 100 105 110
 Phe Tyr His Val Gln Cys Ala Gly Met Arg Leu Arg Val Ala Met Cys
 115 120 125
 His Met Ile Tyr Arg Lys Ala Leu Arg Leu Ser Asn Met Ala Met Gly
 130 135 140
 Lys Thr Thr Thr Gly Gln Ile Val Asn Leu Leu Ser Asn Asp Val Asn
 145 150 155 160
 Lys Phe Asp Gln Val Thr Val Phe Leu His Phe Leu Trp Ala Gly Pro
 165 170 175
 Leu Gln Ala Ile Ala Val Thr Ala Leu Leu Trp Met Glu Ile Gly Ile
 180 185 190
 Ser Cys Leu Ala Gly Met Ala Val Leu Ile Ile Leu Leu Pro Leu Gln
 195 200 205
 Ser Cys Phe Gly Lys Leu Phe Ser Ser Leu Arg Ser Lys Thr Ala Thr
 210 215 220
 Phe Thr Asp Ala Arg Ile Arg Thr Met Asn Glu Val Ile Thr Gly Ile
 225 230 235 240
 Arg Ile Ile Lys Met Tyr Ala Trp Glu Lys Ser Phe Ser Asn Leu Ile
 245 250 255
 Thr Asn Leu Arg Lys Lys Glu Ile Ser Lys Ile Leu Arg Ser Ser Cys
 260 265 270
 Leu Arg Gly Met Asn Leu Ala Ser Phe Phe Ser Ala Ser Lys Ile Ile
 275 280 285
 Val Phe Val Thr Phe Thr Thr Tyr Val Leu Leu Gly Ser Val Ile Thr
 290 295 300
 Ala Ser Arg Val Phe Val Ala Val Thr Leu Tyr Gly Ala Val Arg Leu
 305 310 315 320
 Thr Val Thr Leu Phe Phe Pro Ser Ala Ile Glu Arg Val Ser Glu Ala
 325 330 335
 Ile Val Ser Ile Arg Arg Ile Gln Thr Phe Leu Leu Leu Asp Glu Ile
 340 345 350

Ser Gln Arg Asn Arg Gln Leu Pro Ser Asp Gly Lys Lys Met Val His
 355 360 365
 Val Gln Asp Phe Thr Ala Phe Trp Asp Lys Ala Ser Glu Thr Pro Thr
 370 375 380
 Leu Gln Gly Leu Ser Phe Thr Val Arg Pro Gly Glu Leu Ala Val
 385 390 395 400
 Val Gly Pro Val Gly Ala Gly Lys Ser Ser Leu Leu Ser Ala Val Leu
 405 410 415
 Gly Glu Leu Ala Pro Ser His Gly Leu Val Ser Val His Gly Arg Ile
 420 425 430
 Ala Tyr Val Ser Gln Gln Pro Trp Val Phe Ser Gly Thr Leu Arg Ser
 435 440 445
 Asn Ile Leu Phe Gly Lys Lys Tyr Glu Lys Glu Arg Tyr Glu Lys Val
 450 455 460
 Ile Lys Ala Cys Ala Leu Lys Lys Asp Leu Gln Leu Leu Glu Asp Gly
 465 470 475 480
 Asp Leu Thr Val Ile Gly Asp Arg Gly Thr Thr Leu Ser Gly Gly Gln
 485 490 495
 Lys Ala Arg Val Asn Leu Ala Arg Ala Val Tyr Gln Asp Ala Asp Ile
 500 505 510
 Tyr Leu Leu Asp Asp Pro Leu Ser Ala Val Asp Ala Glu Val Ser Arg
 515 520 525
 His Leu Phe Glu Leu Cys Ile Cys Gln Ile Leu His Glu Lys Ile Thr
 530 535 540
 Ile Leu Val Thr His Gln Leu Gln Tyr Leu Lys Ala Ala Ser Gln Ile
 545 550 555 560
 Leu Ile Leu Lys Asp Gly Lys Met Val Gln Lys Gly Thr Tyr Thr Glu
 565 570 575
 Phe Leu Lys Ser Gly Ile Asp Phe Gly Ser Leu Leu Lys Lys Asp Asn
 580 585 590
 Glu Glu Ser Glu Gln Pro Pro Val Pro Gly Thr Pro Thr Leu Arg Asn
 595 600 605
 Arg Thr Phe Ser Glu Ser Ser Val Trp Ser Gln Gln Ser Ser Arg Pro
 610 615 620
 Ser Leu Lys Asp Gly Ala Leu Glu Ser Gln Asp Thr Glu Asn Val Pro
 625 630 635 640
 Val Thr Leu Ser Glu Glu Asn Arg Ser Glu Gly Lys Val Gly Phe Gln
 645 650 655
 Ala Tyr Lys Asn Tyr Phe Arg Ala Gly Ala His Trp Ile Val Phe Ile

WO 01/34802

196

660 665 670
Phe Leu Ile Leu Leu Asn Thr Ala Ala Gln Val Ala Tyr Val Leu Gln
675 680 685
Asp Trp Trp Leu Ser Tyr Trp Ala Asn Lys Gln Ser Met Leu Asn Val
690 695 700
Thr Val Asn Gly Gly Gly Asn Val Thr Glu Lys Leu Asp Leu Asn Trp
705 710 715 720
Tyr Leu Gly Ile Tyr Ser Gly Leu Thr Val Ala Thr Val Leu Phe Gly
725 730 735
Ile Ala Arg Ser Leu Leu Val Phe Tyr Val Leu Val Asn Ser Ser Gln
740 745 750
Thr Leu His Asn Lys Met Phe Glu Ser Ile Leu Lys Ala Pro Val Leu
755 760 765
Phe Phe Asp Arg Asn Pro Ile Gly Arg Ile Leu Asn Arg Phe Ser Lys
770 775 780
Asp Ile Gly His Leu Asp Asp Leu Leu Pro Leu Thr Phe Leu Asp Phe
785 790 795 800
Ile Gln Thr Leu Leu Gln Val Val Gly Val Val Ser Val Ala Val Ala
805 810 815
Val Ile Pro Trp Ile Ala Ile Pro Leu Val Pro Leu Gly Ile Ile Phe
820 825 830
Ile Phe Leu Arg Arg Tyr Phe Leu Glu Thr Ser Arg Asp Val Lys Arg
835 840 845
Leu Glu Ser Thr Thr Arg Ser Pro Val Phe Ser His Leu Ser Ser Ser
850 855 860
Leu Gln Gly Leu Trp Thr Ile Arg Ala Tyr Lys Ala Glu Glu Arg Cys
865 870 875 880
Gln Glu Leu Phe Asp Ala His Gln Asp Leu His Ser Glu Ala Trp Phe
885 890 895
Leu Phe Leu Thr Thr Ser Arg Trp Phe Ala Val Arg Leu Asp Ala Ile
900 905 910
Cys Ala Met Phe Val Ile Ile Val Ala Phe Gly Ser Leu Ile Leu Ala
915 920 925
Lys Thr Leu Asp Ala Gly Gln Val Gly Leu Ala Leu Ser Tyr Ala Leu
930 935 940
Thr Leu Met Gly Met Phe Gln Trp Cys Val Arg Gln Ser Ala Glu Val
945 950 955 960
Glu Asn Met Met Ile Ser Val Glu Arg Val Ile Glu Tyr Thr Asp Leu
965 970 975

Glu Lys Glu Ala Pro Trp Glu Tyr Gln Lys Arg Pro Pro Ala Trp
 980 985 990
 Pro His Glu Gly Val Ile Ile Phe Asp Asn Val Asn Phe Met Tyr Ser
 995 1000 1005
 Pro Gly Gly Pro Leu Val Leu Lys His Leu Thr Ala Leu Ile Lys Ser
 1010 1015 1020
 Gln Glu Lys Val Gly Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser
 1025 1030 1035 1040
 Leu Ile Ser Ala Leu Phe Arg Leu Ser Glu Pro Glu Gly Lys Ile Trp
 1045 1050 1055
 Ile Asp Lys Ile Leu Thr Thr Glu Ile Gly Leu His Asp Leu Arg Lys
 1060 1065 1070
 Lys Met Ser Ile Ile Pro Gln Gln Pro Val Leu Phe Thr Gly Thr Met
 1075 1080 1085
 Arg Lys Asn Leu Asp Pro Phe Asn Glu His Thr Asp Glu Glu Leu Trp
 1090 1095 1100
 Asn Ala Leu Gln Glu Val Gln Leu Lys Glu Thr Ile Glu Asp Leu Pro
 1105 1110 1115 1120
 Gly Lys Met Asp Thr Glu Leu Ala Glu Ser Gly Ser Asn Phe Ser Val
 1125 1130 1135
 Gly Gln Arg Gln Leu Val Cys Leu Ala Arg Ala Ile Leu Arg Lys Asn
 1140 1145 1150
 Gln Ile Leu Ile Ile Asp Glu Ala Thr Ala Asn Val Asp Pro Arg Thr
 1155 1160 1165
 Asp Glu Leu Ile Gln Lys Lys Ile Arg Glu Lys Phe Ala His Cys Thr
 1170 1175 1180
 Val Leu Thr Ile Ala His Arg Leu Asn Thr Ile Ile Asp Ser Asp Lys
 1185 1190 1195 1200
 Ile Met Val Leu Asp Ser Gly Arg Leu Lys Glu Tyr Asp Glu Pro Tyr
 1205 1210 1215
 Val Leu Leu Gln Asn Lys Glu Ser Leu Phe Tyr Lys Met Val Gln Gln
 1220 1225 1230
 Leu Gly Lys Ala Glu Ala Ala Ala Leu Thr Glu Thr Ala Lys Gln Arg
 1235 1240 1245
 Trp Gly Phe Thr Met Leu Ala Arg Leu Val Ser Asn Ser
 1250 1255 1260

<210> 539

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 539

Cys Leu Ser His Ser Val Ala Val Val Thr
1 5 20

<210> 540

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 540

Ala Val Val Thr Ala Ser Ala Ala Leu
1 5

<210> 541

<211> 14

<212> PRT

<213> Homo sapiens

<400> 541

Leu Ala Gly Leu Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu
5 10

<210> 542

<211> 15

<212> PRT

<213> Homo sapiens

<400> 542

Thr Gln Val Val Phe Asp Lys Ser Asp Leu Ala Lys Tyr Ser Ala
5 10 15

<210> 543

<211> 12

<212> PRT

<213> Homo sapiens

<400> 543

Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val
5 10

<210> 544

<211> 18

<212> PRT

<213> Homo sapiens

<400> 544

Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val Glu Glu Lys Phe

199

5

10

15

Met Thr

<210> 545

<211> 18

<212> PRT

<213> Homo sapiens

<400> 545

Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala
5 10 15

Ser Val

<210> 546

<211> 29

<212> PRT

<213> Homo sapiens

<400> 546

Phe Val Gly Glu Gly Leu Tyr Gln Gly Val Pro Arg Ala Glu Pro Gly
5 10 15Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg Met
20 25

<210> 547

<211> 58

<212> PRT

<213> Homo sapiens

<400> 547

Val Ala Glu Glu Ala Ala Leu Gly Pro Thr Glu Pro Ala Glu Gly Leu
5 10 15Ser Ala Pro Ser Leu Ser Pro His Cys Cys Pro Cys Arg Ala Arg Leu
20 25 30Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro Arg Leu His Gln Leu Cys
35 40 45Cys Arg Met Pro Arg Thr Leu Arg Arg Leu
50 55

<210> 548

<211> 18

<212> PRT

<213> Homo sapiens

<400> 548

Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu Gly Thr Gln Glu

WO 01/34802

PCT/D800/30904

200

10

15

Glu Cys

<210> 549

<211> 18

<212> PRT

<213> Homo sapiens

<400> 549

Leu Glu Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg

5

10

15

Gln Ala

<210> 550

<211> 14

<212> PRT

<213> Homo sapiens

<400> 550

Ser Asp His Trp Arg Gly Arg Tyr Gly Arg Arg Pro Phe

5

10

<210> 551

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 551

Phe Asp Lys Ser Asp Leu Ala Lys Tyr Ser Ala

1

5

10